SOUTHERN POLYPORES

BY

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PREFACE

Polypores are tough or woody fungi found chiefly on wood in the form of brackets of various shapes and sizes, the fruiting surface being composed of tubes or furrows. Sometimes the walls of these tubes split with age and the hymenium appears spiny, resembling the hydnums; sometimes the furrows change with age to appear like gills. When the fruit-body is perennial, the tubes are often arranged in layers. The family may be divided into four groups, the resupinates, the annual poroid species, the perennial poroid species, and the agaric-like species. The resupinate species cannot be satisfactorily studied without the advantages of a large herbarium and are therefore omitted here, but some of the larger species of the other groups are comparatively easy.

Polypores as a class are very destructive to trees and timber. On the other hand, one species possesses medicinal properties, some of the encrusted species supply tinder, and several of the more juicy ones are excellent for food if collected when young. The only species recognized as poisonous is the medicinal one, *Fomes Laricis*, and it is so tough and bitter that no one would think of eating it.

Polypores are very easily collected and preserved and they largely retain their characters when dried, which makes them excellent objects for class study during the winter months. Many of them, also, remain *in situ* during the winter in perfect condition for collecting. As a group, they lend themselves remarkably well to studies in gross and minute anatomy, variation, adaptation, and injurious effects on trees and structural timbers.

North America may be conveniently divided into five regions: (1) eastern Canada and the northern United States southward to the southern boundaries of Virginia, Kentucky, Missouri, and Kansas, and westward to the western boundaries of Kansas, Nebraska, and the Dakotas; (2) the southern United States,

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including North Carolina, South Carolina, Tennessee, Arkansas, Oklahoma, Texas, Louisiana, Mississippi, Alabama, Georgia, and the northern portion of Florida; (3) the Rocky Mountain region, including the remainder of the western United States and Canada with the exception of states bordering on the Pacific Ocean; (4) the far West, including California, Oregon, Washington, British Columbia, and Alaska; and (5) tropical North America, including Mexico, Central America, southern Florida, the Bermudas, the West Indies, and all other islands between North America and South America with the exception of Trinidad.

In all these regions, there is an abundance of work still to be done before our knowledge of the polypores is complete, and it is believed that the publication of a series of books treating the species of each region separately will stimulate effort in this direction.

The terms here used to express the abundance of a species are "rare" or "occasional," "rather frequent," "frequent," "rather common," "common," "very common," and "extremely common." For the sake of brevity, certain liberties have been taken with the term "brown," especially in the keys, where it is often used as a general term for some shade of yellowish-brown or brown. In the same way, allowances must be made for the term "throughout" when used to indicate occurrence, which does not imply the actual presence of a given species on every snowcapped mountain or every treeless prairie within the region.

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Including the pileate species occurring in North Carolina, South Carolina, Tennessee, Arkansas, Oklahoma, Texas, Louisiana, Mississippi, Alabama, Georgia, and the northern portion of Florida. Florida is so imperfectly known mycologically that collections from almost any part of the state are liable to bring surprises.

POLYPORACEAE

Hymenophore annual or perennial; context fleshy-tough, corky, or woody; hymenium poroid or lamelloid, fleshy to woody, never gelatinous.

Hymenium porose.	
Hymenophore annual.	Tribe 1. POLYPOREAE.
Hymenophore perennial.[1]	Tribe 2. FOMITEAE.
Hymenium furrowed.[2]	Tribe 3. DAEDALEAE.

Tribe 1. POLYPOREAE. Hymenophore variable in size and shape, fleshy-tough to corky, annual, sometimes reviving; surface encrusted or anoderm, glabrous or hairy, zonate or azonate; context fibrous, rarely punky, variously colored; tubes cylindric, sometimes splitting into teeth, usually thin-walled; spores rounded or oblong, brown or hyaline; cystidia frequently present; surface of pileus never conidia-bearing; stipe often present, variously attached.

Context white.	
Hymenophore sessile.	
Tubes hexagonal, arranged in radiating rows; context thin.	11. HEXAGONA.
Tubes mostly shallow, marginal and obsolete; hymenium hydnoid or irpiciform at a very early stage.	1. IRPICIPORUS.
Tubes normally poroid, sometimes irpiciform from the rupture of the dissepiments at maturity.	
Context duplex, spongy above, firm below; surface sodden and bibulous.	6. SPONGIPELLIS.

[1] Exceptions occur in *Ganoderma* spp., *Fomitella supina*, and *Elfvingia lobata*. *Porodaedalea* is closely allied to the Daedaleae.

[2] *Cerrena* shows an irpiciform hymenium at maturity, much resembling species of *Coriolus*. *Daedalea* and *Gloeophyllum* sometimes show poroid forms that are very confusing.

Context not duplex as above.
Pileus fleshy-tough to woody and rigid.
Surface anoderm, rarely zonate.
Hymenium more or less smoke-colored at maturity. 7. BJERKANDERA.
Hymenium white or pallid.
Context fleshy to fleshy-tough, friable when dry. 5. TYROMYCES.
Context punky to corky, not friable when dry. 8. TRAMETES.
Surface pelliculose, zonate. 9. RIGIDOPORUS.
Pileus thin, leathery, and more or less flexible; surface usually zonate.
Hymenophore preceded by a cup-shaped sterile body. 2. PORONIDULUS.
Hymenophore not as above.
Hymenophore normally pileate; tubes small and nearly always regular. 3. CORIOLUS.
Hymenophore semiresupinate; tubes large and irregular. 4. CORIOLELLUS.

Hymenophore stipitate.
Stipe compound. 16. GRIFOLA.
Stipe simple.
Plants fleshy, terrestrial. 15. SCUTIGER.
Plants tough, epixylous.
Tubes large, hexagonal and radially elongate from the first. 11. HEXAGONA.
Tubes not as above, except in *Polyporus caudicinus*.
Pileus inverted, erumpent from lenticels. 10. PORODISCULUS.
Pileus erect or lateral, not erumpent.
Context duplex, spongy above, woody below. 14. ABORTIPORUS.
Context homogeneous, firm.
Surface zonate. 12. MICROPORELLUS.
Surface azonate. 13. POLYPORUS.
Context bright-colored, yellow or red; hymenophore sessile.
Pores red or reddish.
Tubes unchanged on drying. 17. PYCNOPORUS.
Tubes orange-colored, becoming dark and resinous on drying. 18. AURANTIPORUS.
Pores yellow; plants very large. 19. LAETIPORUS.
Context brown.
Hymenophore sessile.
Spores hyaline.
Context light-brown.
Context at first fleshy, becoming slightly corky. 24. ISCHNODERMA.
Context tough from the first.

Surface glabrous or nearly so. 23. HAPALOPILUS.
Surface distinctly hairy.
Tubes small and regular. 21. CORIOLOPSIS.
Tubes large and irregular. 22. FUNALIA.
Context dark-brown.
Context friable. 28. PHAEOLUS.
Context tough.
Tubes brown, rarely greenish.
Tubes entire.
Surface heavily bearded. 25. POGONOMYCES.
Surface not bearded. 21. CORIOLOPSIS.
Tubes soon splitting into teeth. 20. CERRENELLA.
Tubes black. 26. NIGROPORUS.
Spores brown. 27. INONOTUS.
Hymenophore stipitate.
Spores hyaline. 28. PHAEOLUS.
Spores brown.
Pileus inverted, pendant. 29. COLTRICIELLA.
Pileus erect; stipe central. 30. COLTRICIA.

Tribe 2. FOMITEAE. Hymenophore large, woody, perennial, rarely small or annual; surface anoderm or encrusted, usually sulcate, sometimes varnished; context punky or woody, variously colored; tubes cylindric, usually thick-walled; spores rounded, smooth or verrucose, hyaline or brown; cystidia frequently present; surface of pileus conidia-bearing in a few species; stipe rarely present, the hymenophore usually being sufficiently elevated by its host. Annual forms and species in a few genera connect this group with the Polyporeae; while the tendency at times to produce a daedaleoid hymenium, shown especially in *Porodaedalea*, connects it with the Daedaleae.

Surface of hymenophore covered with reddish-brown varnish; context punky to corky. 39. GANODERMA.
Surface of hymenophore not as above.
Context white, flesh-colored, or wood-colored. 31. FOMES.
Context olivaceous. 32. FOMITELLA.
Context brown or latericeous.
Surface not encrusted; or, if so, context woody.
Hymenium porose.
Spores hyaline. 33. PYROPOLYPORUS.
Spores brown. 34. FULVIFOMES.
Hymenium porose-daedaleoid. 35. PORODAEDALEA.
Surface encrusted; context punky.
Hymenophore subsessile, cespitose. 36. GLOBIFOMES.
Hymenophore sessile, simple or imbricate.
Spores hyaline or subhyaline. 37. ELFVINGIELLA.
Spores decidedly brown. 38. ELFVINGIA.

Tribe 3. DAEDALEAE. Hymenium annual, very rarely perennial, coriaceous to woody, variable in size; surface anoderm, hairy or glabrous, variously marked; context white or brown, fibrous, woody, or punky; hymenium exceedingly variable, normally labyrinthiform or lamelloid, but often poroid or even irpici-

form, never stratified; spores smooth, brown or hyaline. Poroid and irpiciform plants of this group are difficult to separate from certain species of Polyporeae, forms of *Daedalea confragosa* in particular being troublesome to the beginner. On the other hand, there is little to cause confusion between this group and the Fomiteae, if we except the single distinctly perennial species of *Daedalea* and the daedaleoid forms of *Porodaedalea*.

Context white or wood-colored.	
Hymenium labyrinthiform, often becoming lamellate or irpiciform.	
Hymenium very soon becoming irpiciform.	40. CERRENA.
Hymenium rarely becoming irpiciform and then not until maturity.	41. DAEDALEA.
Hymenium lamellate from the first, not becoming irpiciform.	42. LENZITES.
Context brown.	
Hymenophore sessile, furrows radiate.	43. GLOEOPHYLLUM.
Hymenophore centrally stipitate, furrows concentric.	44. CYCLOPORUS.

1. IRPICIPORUS Murrill

Hymenophore annual, epixylous, sessile, effused-reflexed, white or pallid throughout; surface anoderm, glabrous or velvety, not distinctly zonate, margin acute; context white, coriaceous or corky; hymenium hydnoid or irpiciform, with traces of shallow, obsolete tubes near the margin; spores smooth, hyaline.

Teeth 1 cm. or more long; pileus usually large and thick.	1. *I. mollis.*
Teeth less than 0.5 cm. long; pileus thin and shortly reflexed.	2. *I. lacteus.*

1. IRPICIPORUS MOLLIS (Berk. & Curt.) Murrill

Pileus sessile, dimidiate, imbricate, decurrent, 3–4 × 4–8 × 1–3 cm.; surface white, finely pubescent, azonate, sulcate at times, often aculeate behind with age; context white, coriaceous, 1–5 mm. thick; tubes soon splitting into teeth, which are 1–2 cm. long, compressed to subulate, slender, more or less pointed, dentate or incised, puberulent to glabrous, white to pale-flesh-colored, about 1 mm. apart at the base; spores globose, 5–7 μ.

Frequent on dead or diseased trunks of deciduous trees throughout, sometimes growing near the tops of trees.

2. IRPICIPORUS LACTEUS (Fries) Murrill

Pileus extensively effused, shortly reflexed, imbricate, dimidiate, laterally connate, 0–1.5 × 1–4 × 0.1–0.2 cm.; surface white, subzonate, concentrically furrowed in large specimens, villose; margin very thin, deflexed, undulate to lobed; context membranous, less than 1 mm. thick; tubes short, irregular, white to

isabelline, 1–3 mm. long, mouths angular, about 2 to a mm., edges uneven, soon splitting into teeth, which are compressed, pointed, fimbriate, dentate to incised; spores cylindric, slightly curved, smooth, 6–7 × 2–3 μ.

Extremely common throughout on dead branches and trunks of deciduous trees.

2. PORONIDULUS Murrill

Hymenophore annual, tough, sessile, epixylous, at first sterile and cup-like, the fertile portion developing from the sterile; context white, fibrous; tubes short, thin-walled, mouths polygonal; spores ellipsoid, smooth, hyaline.

1. PORONIDULUS CONCHIFER (Schw.) Murrill

Pileus thin, coriaceous, dimidiate to flabelliform, usually narrowly attached, conchate, springing from a sterile, cup-like structure, which usually appears on the mature hymenophore near the base, 1.5–2 × 2–4 × 0.1–0.2 cm.; surface white to isabelline, with pale-latericeous zones, finely tomentose to glabrous, the sterile portion avellaneous, with narrow, black, concentric lines; margin thin, concolorous, undulate; context very thin, membranous, less than 1 mm. in thickness; tubes short, about 1 mm. long, thin-walled, white, mouths angular, irregular, 3 to a mm., edges thin, uneven, dentate.

Very common throughout on dead elm branches.

3. CORIOLUS Quél.

Hymenophore annual, epixylous, sessile, zonate, anoderm, hairy or glabrous; context thin, white, flexible, fibrous, leathery; tubes thin-walled, white, at length splitting into irpiciform teeth in several species, mouths polygonal or irregular; spores smooth, hyaline.

Tubes more or less entire, at least until the hymenophore is quite old.
- Surface of pileus wholly or partly glabrous when mature or clothed only with inconspicuous hairs.
  - Pileus not entirely glabrous at maturity.
    - Pileus marked at maturity with glabrous zones of a different color from the rest of the surface.
      - Glabrous zones large, numerous, conspicuously and variously colored. — 1. *C. versicolor.*
      - Glabrous zones small and comparatively inconspicuous.
        - Hymenium white or yellowish. — 2. *C. ectypus.*

Hymenium umbrinous or fuscous.
Hymenium umbrinous; surface opaque, with very few zones. 3. *C. alabamensis.*
Hymenium fuscous; surface shining, multizonate. 4. *C. sector.*
Pileus not marked with glabrous zones; hymenophore semiresupinate; tubes large, hexagonal. 5. *C. hexagoniformis.*
Pileus entirely glabrous at maturity.
Margin of pileus entire or lobed, not becoming fimbriate or lacerate.
Context punky, 2–3 mm. thick; tubes 6 to a mm. 6. *C. subectypus.*
Context fleshy-tough, 1–3 mm. thick; tubes 4–5 to a mm.; pileus almost brittle when dry. 7. *C. ochrotinctellus.*
Margin of pileus very thin, becoming fimbriate or lacerate at maturity.
Tubes large, 2–3 to a mm., margin fimbriate. 8. *C. Drummondii.*
Tubes only half as large, margin lacerate. 9. *C. membranaceus.*
Surface of pileus clothed entirely with a conspicuous hairy covering.
Pileus 5 mm. or more in thickness and several centimeters broad; surface roughly hirsute. 10. *C. nigromarginatus.*
Pileus much thinner.
Pileus 2–6 cm. broad. 11. *C. sericeohirsutus.*
Pileus scarcely 1 cm. broad. 12. *C. sublilacinus.*
Tubes soon breaking up into long irpiciform teeth.
Pileus 5–10 cm. broad and 5 mm. or more thick. 13. *C. molliusculus.*
Pileus much smaller and thinner.
Surface ashy-white, villose; plants confined to coniferous wood. 14. *C. abietinus.*
Surface wood-colored, tomentose; plant found on both deciduous and coniferous wood. 15. *C. prolificans.*

1. CORIOLUS VERSICOLOR (L.) Quél.

Pileus densely imbricate, very thin, dimidiate, conchate, 2–4 × 3–7 × 0.1–0.2 cm.; surface smooth, velvety, shining, marked with conspicuous, glabrous zones of various colors, mostly latericeous, bay, or black; margin thin, sterile, entire; context thin, membranous; tubes punctiform, less than 1 mm. long, white to isabelline within, mouths circular to angular, regular, even, 4–5 to a mm., edges thick and entire, becoming thin and dentate, white, glistening, at length opaque-isabelline or slightly umbrinous; spores allantoid, 4–6 × 1–2 μ.

Extremely common throughout on all forms of dead wood. It also causes a serious root-rot in many trees and is a wound parasite on *Catalpa.*

2. CORIOLUS ECTYPUS (Berk. & Curt.) Pat.

Pileus tough, rigid or slightly flexible, imbricate, sessile or umbonate-sessile, dimidiate, conchate, 3–7 × 4–8 × 0.5–0.7 cm.; surface finely tomentose to nearly glabrous, smooth, pale-isabelline with pale-rufous zones; margin thin, entire, sterile; context punky, zonate, 2–4 mm. thick; tubes 2–3 mm. long, white within, mouths circular to slightly angular, very regular, 4–5 to a mm., edges thick, entire, pallid, becoming thin, slightly dentate, glistening and pale-avellaneous at maturity; spores ellipsoid, 3 × 2 μ.

Frequent on dead deciduous wood from South Carolina to Florida and Louisiana.

3. CORIOLUS ALABAMENSIS Murrill

Pileus thin, densely imbricate, rigid when dry, dimidiate, convex above, concave below, 2 × 3–4 × 0.1–0.2 cm.; surface hirtose-tomentose, isabelline, opaque, with 1–3 concentric, nearly glabrous, avellaneous to fuliginous, depressed zones near the margin, which is thin, sterile, pallid, somewhat plicate, and entire to undulate; context thin, white, fibrous; tubes punctiform, less than 1 mm. long, white to pallid within, mouths angular, rather irregular, 3–5 to a mm., edges thin, entire, white to avellaneous, sometimes umbrinous in dried specimens.

Found only at Auburn, Alabama, on dead wood.

4. CORIOLUS SECTOR (Ehrenb.) Pat.

Pileus rather thin, flexible, flabelliform, often spuriously short-stipitate, imbricate, laterally connate, 2–4 × 3–6 × 0.1–0.2 cm.; surface multizonate, finely radiate-striate, often plicate, silky, usually shining, more or less tomentose near the base, avellaneous to isabelline; margin entire to fimbriate or deeply dissected, sometimes palmate; context thin, coriaceous, avellaneous, about 0.5 mm. thick; tubes 0.5–1 mm. long, avellaneous within, mouths angular, irregular, very variable in size, 2–6 to a mm., edges thin, dentate to lanceolate, avellaneous to fuliginous; spores globose, 3.5–5 μ.

Common on dead wood from South Carolina southward.

5. CORIOLUS HEXAGONIFORMIS Murrill

Pileus resupinate, effused, narrowly reflexed, white throughout, slightly stramineous in dried specimens, 0–0.3 × 2–4 × 0.1–0.2 cm.; surface soft, nearly glabrous, azonate; margin

thin, irregular, lobed, sometimes inflexed; context thin, white, fibrous; tubes large, shallow, about 1 mm. deep, mouths hexagonal, quite regular, 1 mm. in diameter, edges thin, entire or slightly dentate.

Found on dead pine branches at Auburn, Alabama.

6. CORIOLUS SUBECTYPUS Murrill

Pileus imbricate, sessile, flabelliform, rather thin, slightly flexible to rigid, 4–7 × 6–10 × 0.2–0.4 cm.; surface smooth, glabrous, white to pallid, tinged with bay at times behind, indistinctly concentrically furrowed, subshining, finely multizonate; margin thin, undulate to lobed, sometimes inflexed when dry; context white, punky, 2–3 mm. thick; tubes about 1 mm. long, white within, mouths glistening, circular to angular, 6 to a mm., edges very thin, denticulate, white, pale-ochraceous in dried specimens, rather firm when young, becoming flaccid and wearing away with age; spores ovoid, 5–6 × 3–4 μ.

Found by Rau on dead wood in Florida.

7. CORIOLUS OCHROTINCTELLUS Murrill

Pileus subimbricate, dimidiate or flabelliform, applanate or conchate, sessile to substipitate, rigid, more or less brittle, 2–6 × 3–9 × 0.2–0.5 cm.; surface glabrous, smooth, subshining, ochroleucous with ochraceous zones; margin papery-thin, fragile, often incurved, entire or undulate, rarely lobed; context milk-white, fleshy-tough, somewhat friable, 1–3 mm. thick; tubes 1–3 mm. long, slender, white to ochroleucous within, mouths very regular, angular, 4–5 to a mm., edges thin, entire, white to ochraceous or isabelline; spores globose, 3 μ.

Found several times on decayed wood in Mississippi.

8. CORIOLUS DRUMMONDII (Klotzsch) Pat.

Pileus very thin, slightly flexible, but rather brittle, laterally connate, somewhat imbricate, spatulate or flabelliform, 1–2 × 1–1.5 × 0.05–0.1 cm.; surface longitudinally fibrose-striate, rough, nearly glabrous, pallid to light-bay, subzonate; margin very thin, fimbriate, irregular; context thin, membranous, white to pallid; tubes very short, less than 1 mm. thick, mouths angular, radially elongate, 3–4 to a mm., pallid to discolored, edges thin, flaccid, dentate to lacerate.

Known originally only from New Orleans, Louisiana, but recently found at Ocala, Florida, where it is said to be common on cypress trunks.

9. CORIOLUS MEMBRANACEUS (Sw.) Pat.

Pileus very thin, densely imbricate, dimidiate or flabelliform, conchate, 2–4 × 3–6 × 0.1–0.2 cm.; surface multizonate, finely radiate-furrowed, short-tomentose to glabrous and subshining, white or pallid with slightly darker zones; margin very thin, undulate or lobed, usually splitting with age; context white, fibrous, 0.5–1.5 mm. thick; tubes very short, less than 1 mm., white to discolored within, mouths angular, 4–6 to a mm., edges very thin, denticulate, fimbriate with age, white to isabelline or nearly fulvous in dried specimens; spores globose, 4–5 μ.

Found once or twice on dead wood at New Orleans, Louisiana, Extremely common in tropical America, where it was first described from Jamaica.

10. CORIOLUS NIGROMARGINATUS (Schw.) Murrill

Pileus confluent-effused, more or less imbricate, dimidiate, applanate, corky-leathery, rather thick, flexible or rigid, 3–5 × 5–8 × 0.3–0.8 cm.; surface conspicuously hirsute, isabelline to cinereous, concentrically furrowed and zoned; margin at length thin, often fuliginous, sterile, finely strigose-tomentose, entire or undulate; context white, thin, fibrous, spongy above, 1–4 mm. thick; tubes white, 1–2 mm. long, mouths circular to angular, 4 to a mm., quite regular, edges thin, firm, tough, entire, white to yellowish or umbrinous; spores cylindric, slightly curved, 2.5–3 μ.

Extremely common throughout on all forms of dead deciduous wood.

11. CORIOLUS SERICEOHIRSUTUS (Klotzsch) Murrill

Pileus very thin, flexible, effused-confluent, sometimes wholly resupinate, conchate-reflexed, 0–3 × 2–6 × 0.05–0.1 cm.; surface conspicuously silky-villose to strigose-hirsute, multizonate, pale-brown to hoary, with slightly darker zones; margin thin, entire or undulate, dentate or eroded with age; context thin, white, membranous; tubes shallow, 1–1.5 mm. deep, white to slightly discolored within, mouths hexagonal, irregular, very variable in size, 0.3–1 mm. in diameter, edges thin, denticulate to dentate, white to discolored, sometimes becoming umbrinous; spores 6 × 4 μ.

Frequent throughout on dead trunks and branches of red cedar. Also extending northward occasionally into the middle states.

12. CORIOLUS SUBLILACINUS Murrill

Pileus imbricate-confluent, cup-shaped, sessile, 0.5–1 cm. broad, less than 1 mm. thick; surface densely villose-tomentose, scarcely zonate, white to discolored; margin thin, concolorous, inflexed when dry, somewhat undulate; context thin, white, membranous, rather rigid; tubes punctiform, less than 1 mm. long, mouths angular to irregular, large for the size of the pileus, 3–5 to a mm., edges pale-lilac, fading to dull-avellaneous, rather thick, entire.

Collected once in Florida on dead branches.

13. CORIOLUS MOLLIUSCULUS (Berk.) Murrill

Pileus effused-reflexed, imbricate, laterally connate, the reflexed portion dimidiate, conchate, 2–5 × 5–12 × 0.3–0.7 cm.; surface white, obscurely zonate, nearly smooth, somewhat silky, fibrillose-tomentose; margin acute or obtuse, undulate to lobed; context soft-corky, white, 1–2 mm. thick; tubes 3–5 mm. long, white to discolored within, mouths large and irregular, variable in size, averaging 2 to a mm., edges thin, lacerate-dentate, white to discolored or light-bay; spores oblong, slightly curved, 7–9 × 2.5–3 μ.

Common throughout on dead deciduous wood. *C. biformis* (Kl.) Pat. has been the usually accepted name for this species.

14. CORIOLUS ABIETINUS (Dicks.) Quél.

Pileus effused-reflexed, the reflexed portion thin, tough, flexible to nearly rigid, 0.5–1.5 × 1–3 × 0.05–0.1 cm.; surface obsoletely zonate, grayish-white, villose; margin thin, undulate to lobed, fimbriate with age, incurved on drying; context very thin, white, membranous; tubes uneven, irregular, soon becoming irpiciform, mouths variable in size, 2–3 to a mm., edges thin, lacerate-dentate, unequal, pallid or violet, fading with age, somewhat flesh-tinted in dried specimens; spores globose, 4.5–5.5 μ.

Common throughout on decaying coniferous trunks.

15. CORIOLUS PROLIFICANS (Fries) Murrill

Pileus exceedingly variable, sessile or affixed by a short tubercle, dimidiate to flabelliform, broadly or narrowly attached, 2–5 × 2–6 × 0.1–0.3 cm.; surface finely villose-tomentose, smooth, white or slightly yellowish, marked with a few narrow, indistinct, latericeous or bay zones; margin thin, sterile, entire to lobed; context very thin, white, fibrous; tubes 1–3 mm. long, white to

discolored within, mouths angular, somewhat irregular, 3–4 to a mm., usually becoming irpiciform at an early stage, edges acute, dentate, becoming lacerate, white to yellowish or umbrinous.

Extremely common throughout on dead deciduous trees, often covering entire trunks. It is easily mistaken for one of the Hydnaceae.

4. CORIOLELLUS Murrill

Hymenophore small, dry, annual, epixylous, semiresupinate; surface anoderm, usually azonate; context white, thin, fibrous to corky; hymenium concolorous; tubes thin-walled, usually rather large and irregular, dentate, but not irpiciform; spores smooth, hyaline.

Pileus white or pale-isabelline.	1. *C. Sepium.*
Pileus fulvous to latericeous.	2. *C. serialis.*

1. CORIOLELLUS SEPIUM (Berk.) Murrill

Pileus small, dimidiate, laterally connate, narrowly attached when young, becoming decurrent and often effused, 0.5–1 × 1–3.5 × 0.2–0.5 cm.; surface white or pale-wood-colored, finely tomentose to glabrous, subzonate, smooth or broadly radiately furrowed; margin thin or tumid, entire to undulate; context white, 1–2 mm. thick, soft-corky; tubes white, 2–3 mm. long, mouths angular, uneven, irregular, sometimes slightly sinuous, 1–2 to a mm., edges thin, undulate to dentate, white; spores oblong, 12 × 5 μ.

Common throughout on structural timber and other dead wood, especially that of deciduous trees.

2. CORIOLELLUS SERIALIS (Fries) Murrill

Pileus corky to woody, extensively effused, resupinate or shortly reflexed, seriately elongate, laterally connate, the reflexed portion very narrow, 0–1 × 1–1.5 × 0.3–0.5 cm.; surface uneven, subzonate, appressed-tomentose to strigose, hoary-fulvous to latericeous-fulvous; margin thick, pallid, undulate to very uneven; context white, fibrous, membranous, less than 1 mm. thick; tubes slender, white, very variable in size and shape, 2–8 mm. long, mouths circular to angular or irregular, pure-white, becoming pale-yellowish-brown at times on drying, about 3 to a mm., edges rather thick, firm, entire, becoming thinner and dentate; spores oblong, 6–8 × 2.5–3 μ.

Rather common throughout on dead coniferous and deciduous wood.

5. TYROMYCES P. Karst.

Hymenophore annual, epixylous, sessile, anoderm, azonate, glabrous or nearly so; context white, fibrous, fleshy to fleshy-tough, rigid and friable when dry; tubes thin-walled, white or yellowish, mouths polygonal; spores smooth, hyaline.

Pileus large, 8 cm. or more in diameter.
- Tubes less than 5 mm. long. — 1. *T. palustris.*
- Tubes more than 5 mm. long.
  - Surface of pileus very smooth.
    - Pileus white or slightly yellowish, unchanging; tubes small, entire. — 2. *T. Calkinsii.*
    - Pileus becoming dark-sordid-bay throughout on drying; tubes 3 to a mm., lacerate. — 3. *T. Smallii.*
  - Surface of pileus sodden, rough. — 4. *T. Spraguei.*

Pileus small to medium, rarely exceeding 5 cm. in diameter.
- Pileus resinous or cartilaginous in appearance; tubes lacerate. — 5. *T. cerifluus.*
- Pileus neither resinous nor cartilaginous.
  - Surface conspicuously villose or tomentose.
    - Pileus more or less bluish, not effused. — 6. *T. caesius.*
    - Pileus not bluish, effused-reflexed. — 7. *T. semipileatus.*
  - Surface glabrous or nearly so.
    - Surface pelliculose, more or less tinged with gray. — 8. *T. chioneus.*
    - Surface white, without a pellicle. — 9. *T. lacteus.*

1. TYROMYCES PALUSTRIS (Berk. & Curt.) Murrill

Pileus dimidiate, convex above, plane or concave below, much thicker behind, subimbricate, fleshy-tough to rigid and somewhat friable when dry, 4–6 × 8–10 × 1–3 cm.; surface smooth, glabrous, white to slightly yellowish, sometimes rough and tubercular behind; margin thin or thick, entire or undulate, white, becoming slightly discolored; context 1–2 cm. thick, white, fleshy-fibrous when fresh, becoming firm and somewhat friable when dry; tubes 2–5 mm. long, white to slightly yellowish within, about 4 to a mm., edges thin, white to yellowish, entire to dentate.

Occasional on pine trunks in Georgia, South Carolina, and Florida.

2. TYROMYCES CALKINSII Murrill

Pileus somewhat imbricate, dimidiate, convex above, concave below, cheesy when fresh, rigid when dry, 3–5 × 6–8 × 1.5–2 cm.; surface smooth, glabrous, azonate, white to cremeous or ochraceous-fulvous; margin thin or thick, entire or undulate, easily bruised, fertile; context white, fleshy to somewhat friable,

very firm, 5–10 mm. thick; tubes slender, white to ochraceous within, equaling the thickness of the context, mouths regular, angular, 3–4 to a mm., firm, white to yellowish and finally avellaneous, edges thin, entire to slightly dentate; spores globose, 5 μ.

Found a few times on dead wood in Florida.

3. TYROMYCES SMALLII Murrill

Pileus compressed-ungulate, with a large umbo, broadly sessile, dimidiate, fleshy-tough, difficult to dry, 5–7 × 6–10 × 2–5 cm.; surface very smooth, glabrous, azonate, white to cremeous, changing to sordid-bay or blackish on drying; context fleshy-tough, zonate, watery, moist and flexible even in dried specimens, dull-white to sordid-avellaneous, tinged with flesh-color, 0.5–2.5 cm. thick; tubes 5–8 mm. long, 3 to a mm., rather large and irregular at times from the splitting of the dissepiments, partially collapsed, somewhat fragile, dark-bay throughout in dried specimens, edges thin, lacerate, fimbriate.

Found a few times on pine trunks in Florida and Louisiana.

4. TYROMYCES SPRAGUEI (Berk. & Curt.) Murrill

Pileus subimbricate, dimidiate or flabelliform, broadly sessile or attenuate behind, convex, fleshy-tough and watery to rigid and fragile when dry, 4–7 × 5–10 × 1–2 cm.; surface at first milk-white, finely tomentose to glabrous, slightly tuberculose, azonate, sodden, containing depressions filled with exuded water, becoming discolored and roughened and often decaying, especially in damp weather, with a strong and disagreeable odor; margin undulate or slightly lobed, acute, usually discolored, sometimes smoky-black, inflexed when dry; context white, zonate, cheesy when fresh, rigid and somewhat fragile when dry; tubes small, white to yellowish within, 3–8 mm. long, mouths somewhat uneven, angular, 3–4 to a mm., edges white to yellowish, thin, entire; spores ellipsoid, 6 × 4 μ.

Occasional on dead stumps and trunks of chestnut and oak in North Carolina and Alabama.

5. TYROMYCES CERIFLUUS (Berk. & Curt.) Murrill

Pileus dimidiate, narrowly attached, laterally confluent, fleshy-tough to rigid, thin, 1.5–2.5 × 2–5 × 0.2–0.4 cm.; surface white to ochraceous, latericeous and polished in spots, radiate-rugose, sulcate, resinous-guttate, floccose-tomentose; margin thin, inflexed, undulate, easily bruised; context very thin, white,

fibrous, fragile when dry, less than 1 mm. thick; hymenium uneven, cribrose, especially behind; tubes slender, white to discolored, 2–3 mm. long, mouths angular, 4 to a mm., white to yellowish-discolored, edges thin, fimbriate-dentate to sharply lacerate, presenting to the unaided eye the appearance of a *Hydnum;* spores globose, 4 μ.

Occasional on rotten logs in swamps in South Carolina.

6. TYROMYCES CAESIUS (Schrad.) Murrill

Pileus dimidiate, imbricate, often narrowly attached, with a prominent umbo, variable in habit and size, soft, spongy when fresh, fragile when dry, 1–2 × 3–6 × 0.5–1.5 cm.; surface sodden, tomentose or villose-tomentose, azonate, murinous or griseous when fresh, becoming caesious or fading to nearly pure-white on drying, often nearly glabrous with age; context white, soft, friable, 5–8 mm. thick; tubes long and slender, 5–10 mm. long, caesious within, collapsing, friable, mouths angular, 3–4 to a mm., edges white or bluish-gray, very thin, dentate to long and sharply lacerate; spores elongate, 5–5.5 × 1.5 μ.

Frequent in the southern Alleghanies on dead wood of both deciduous and coniferous trees.

7. TYROMYCES SEMIPILEATUS (Peck) Murrill

Pileus effused, largely resupinate, suborbicular or laterally elongate, very narrowly reflexed, the reflexed portion 0–1 × 2–5 × 0.3–0.5 cm.; surface white or pale-isabelline, subvillose or scabrous, azonate; margin thin, undulate, sometimes inflexed; context white, fleshy-tough to fragile, 2–4 mm. thick; tubes short, slender, white to yellowish within, mouths minute, circular to slightly angular, scarcely conspicuous, 7 to a mm., edges thin, very even, entire, white to pallid, often bluish-discolored in spots or blotches; spores subglobose, 6–8 μ.

Frequent throughout on fallen dead branches of deciduous trees.

8. TYROMYCES CHIONEUS (Fries) P. Karst.

Pileus imbricate, sessile, dimidiate, convex, 2–4 × 3–6 × 1 cm.; surface sodden, grayish-cinereous or yellowish-white, azonate, smooth, pubescent to glabrous, margin acute but rather thick, entire, concolorous, fertile; context sodden and watery when fresh, with a mild flavor and acid odor, white, homogeneous and fragile when dry, cutting with a smooth surface, 7–10 mm. thick; tubes shorter than the thickness of the context, 2–4 mm. long, white to yellowish within, fragile, mouths even, glistening,

angular, sinuous at times, 4 to a mm., white to ochraceous, edges thin, fimbriate-dentate; spores cylindric, curved, 4–5 × 1–2 μ.

Frequent throughout on dead branches and trunks of deciduous trees.

9. TYROMYCES LACTEUS (Fries) Murrill

Pileus dimidiate, sessile, decurrent, convex, very soft, fleshy, becoming rigid when dry, 2–4 × 5–8 × 0.5–1.5 cm.; surface milk-white, sometimes slightly discolored, azonate, finely tomentose or pubescent to nearly glabrous, more or less silky-striate; margin abruptly thin, inflexed, undulate, concolorous; context spongy-fibrous, very fragile when dry, 5–10 mm. thick, milk-white, zonate at times; tubes quite long, slender, equaling the thickness of the context, 5–10 mm., milk-white within, mouths regular, angular, 4–5 to a mm., glistening, becoming lacerate and somewhat uneven, edges thin, dentate to sharply toothed, fragile, white to slightly yellowish; spores allantoid, 4–5 × 1–1.5 μ.

Frequent throughout on dead deciduous and coniferous wood.

6. SPONGIPELLIS Pat.

Hymenophore annual, epixylous, sessile, dimidiate, simple or imbricate, rather large; surface white, anoderm, sodden and bibulous; context white, duplex, spongy above, firm below; hymenium concolorous, tubes thin-walled; spores smooth, hyaline.

Tubes white or slightly discolored. 1. *S. unicolor.*
Tubes becoming very dark colored. 2. *S. fissilis.*

1. SPONGIPELLIS UNICOLOR (Schw.) Murrill

Pileus somewhat imbricate, large and spongy, at length indurate, dimidiate, often ungulate, 5–7 × 10–15 × 3–5 cm.; surface spongy-tomentose, hirtose, azonate, smooth, sordid-white to isabelline or fulvous; margin very thick and rounded, sterile, entire, concolorous; context spongy-fibrous, white, indurate with age, especially below, 1–2 cm. thick; tubes very long, 2–3 cm., white to isabelline within, mouths large, irregular, often sinuous, 1–2 mm. broad, edges thin, fimbriate-dentate to slightly lacerate, white to isabelline, at length bay and resinous in appearance; spores globose, 6–8 μ.

Rather common throughout most of the region on diseased living trunks of oak, maple, and a few other deciduous trees.

2. SPONGIPELLIS FISSILIS (Berk. & Curt.) Murrill

Pileus dimidiate to flabelliform, subimbricate, elongate and decurrent behind, convex, 4–6 × 7–15 × 1–2 cm.; surface white to isabelline, at length discolored, opaque, somewhat radiate-rugose, finely spongy-tomentose, setose or fibrillose to subglabrous; margin rather thin, fertile, undulate to lobed, discolored and inflexed when dry; context conspicuously zonate, fibrous, fissile, watery and white when fresh, rigid and hard, with an unpleasant odor on drying, 5–10 mm. thick; tubes 3–8 mm. long, white to isabelline, at length resinous and bay to black, mouths angular, 2 to a mm., edges thin, nearly entire, collapsing into a rigid mass; spores ovoid, 5 × 3 μ.

Occasional on dead or decaying deciduous wood from North Carolina to Florida and Louisiana.

7. BJERKANDERA P. Karst.

Hymenophore annual, epixylous, sessile, anoderm, glabrous, azonate, corky; context white, tough or woody, not friable when dry; tubes thin-walled, more or less smoke-colored, mouths polygonal; spores smooth, hyaline.

Hymenium smoke-colored when young, soon becoming black. 1. *B. adusta.*
Hymenium pallid when very young, becoming more or less blackish with age. 2. *B. fumosa.*

1. BJERKANDERA ADUSTA (Willd.) P. Karst.

Pileus cespitose-imbricate, decurrent, sometimes effused, conchate, fleshy-tough or corky, somewhat flexible when dry, 2–4 × 4–8 × 0.2–0.4 cm.; surface undulate, indistinctly zonate, especially near the margin, finely tomentose or villose, isabelline with slightly darker markings; margin thin, undulate, sterile, pallid, usually becoming black as though scorched; context fibrous-corky, white, 1–3.5 mm. thick; tubes short, 1 mm. or less long, smoky-white to blackish within, mouths regular, angular, 5–6 to a mm., smoke-colored and pruinose when young, soon becoming grayish-black, edges thin, entire; spores ellipsoid-allantoid, 3–5 × 1.5–2.5 μ.

Extremely common throughout on dead deciduous wood and rarely on that of coniferous trees.

2. BJERKANDERA FUMOSA (Pers.) P. Karst.

Pileus cespitose-imbricate, fleshy-corky, firm, dimidiate, conchate, decurrent, 2–4 × 5–10 × 0.5–2 cm.; surface smooth,

finely tomentose, pale-isabelline, subzonate at times; margin thin, concolorous, undulate, easily blackening, usually broadly sterile; context fibrous-corky, somewhat zonate, white to pallid, 5–15 mm. thick; tubes short, 2–3 mm. long, white to discolored within, mouths regular, even, circular, 4–5 to a mm., whitish to smoky-isabelline and finally blackish with extreme age, edges thick, entire; spores globose, 5–8 μ.

Common throughout on decayed deciduous wood and rarely on coniferous wood. *B. puberula* (Berk. & Curt.) Murrill is not sufficiently distinct.

8. TRAMETES Fries

Hymenophore annual, epixylous, sessile; surface anoderm, white, azonate; context white, homogeneous, coriaceous to soft-corky; hymenium concolorous, rigid; tubes thin-walled, mouths circular to irregular; spores smooth, hyaline.

1. TRAMETES SUBNIVOSA Murrill

Pileus imbricate, dimidiate, laterally connate, very rigid when dry, 3–5 × 6–8 × 1 cm.; surface finely tomentose to glabrous, smooth, opaque, white to sordid-white, azonate; margin thin, irregular, undulate, sterile, pallid; context zonate, white to discolored, fibrous-corky, very firm, 4–7 mm. thick; tubes 2–4 mm. long, white within, mouths regular, nearly even, 6 to a mm., edges thin, subentire, white to isabelline or avellaneous, glistening, umbrinous with age.

Occasional on dead deciduous wood in Florida, Mississippi, and Louisiana. Also found on living water oak at New Orleans and on cypress at Eustis, Florida.

9. RIGIDOPORUS Murrill

Hymenophore annual, at times reviving, epixylous, sessile, dimidiate to circular, simple or imbricate; surface pelliculose, multizonate, margin thin, incurved when dry; context thin, white, fleshy-corky, very rigid when dry; tubes minute, regular, light-colored, mouths usually pruinose when young; spores smooth, hyaline.

1. RIGIDOPORUS SURINAMENSIS (Miq.) Murrill

Pileus imbricate-multiplex, laterally connate, dimidiate or reniform, fleshy-corky, convex or applanate, 2–3 × 2.5–5 × 0.3–0.6 cm.; surface smooth or rugulose, pruinose to glabrous,

isabelline to latericeous; margin acute, thin, inflexed, entire or undulate, often obtuse with age; context very thin, white, fibrous, 1–2 mm. thick; tubes white, 2–4 mm. long, slender, mouths minute, circular to angular, regular, even, 6 to a mm., edges thin, entire, white to pallid, becoming discolored with age; spores globose, 3–4.5 μ.

Frequent on water-soaked deciduous trunks in the warmer portions of the Gulf states.

10. PORODISCULUS Murrill

Hymenophore small, annual, tough, epixylous, erumpent from the lenticels of dead branches; stipe attached to the vertex of the pileus, usually curved at maturity; context white, fibrous; tubes cylindric, short, one-layered, mouths constricted; spores globose, smooth, hyaline.

1. PORODISCULUS PENDULUS (Schw.) Murrill

Pileus very small, turbinate-cup-shaped, attached at the vertex, soon decurved and pendant, gregarious, erumpent from the lenticels of dead branches, 1–2 mm. broad, 3–5 mm. long; surface anoderm, azonate, smooth, umbrinous, uniformly covered with a brown powder, often ashy-white with age; margin inflexed, concolorous, sterile; context white, fibrous, very thin; tubes very short, annual, white within, mouths circular, constricted, white, pruinose, becoming concolorous, 6–7 to a mm., edges entire; spores globose, 4 μ; stipe 2 mm. or less in length, vertically attached, gradually expanding into the pileus, which it resembles in surface and context.

Frequent throughout on fallen dead twigs of various deciduous trees and occasionally on red cedar. Common in some localities on dead chestnut, chestnut-oak, and sumac.

11. HEXAGONA Pollini

Hymenophore small, annual, epixylous, flabelliform to reniform, rarely circular, stipitate, the stipe sometimes much reduced; surface smooth or tessellate, margin thin; context thin, white, fibrous, fleshy to tough, usually fragile when dry; hymenium of radiating rows of large, thin-walled, hexagonal tubes, usually radially elongate; spores smooth, hyaline.

Tubes unequally hexagonal, the radial walls longer.
- Pileus reniform; stipe much reduced. — 1. *H. alveolaris.*
- Pileus flabelliform; stipe usually quite distinct. — 2. *H. daedalea.*

Tubes equally hexagonal. — 3. *H. cucullata.*

1. HEXAGONA ALVEOLARIS (DC.) Murrill

Pileus reniform to circular, convex-plane, depressed behind, 3–4 × 5–7 × 0.2–0.5 cm.; surface at first fulvous, strigose-squamose, at length pallid and almost glabrous; margin at first thin, entire, incurved, becoming thicker and undulate or lobed; context white, opaque, 1–2 mm. thick; tubes decurrent, white to pallid, 2–4 mm. long, mouths 1–1.5 × 2–3 mm., edges thin, rigid, dentate; spores ellipsoid, 10–14 × 4–4.5 μ; stipe usually a lateral tubercle, at times eccentric or central, varying in length.

Common throughout the southern Alleghanies on fallen branches and other forms of dead deciduous wood.

2. HEXAGONA DAEDALEA (Link) Murrill

Pileus spatulate-obovate to reniform, applanate, usually attenuate behind, 4–8 × 2–6 × 0.1–0.3 cm.; surface white when fresh, radiate-striate, finely tomentose to glabrous, hispid behind, tessellate near the margin, which is thin, often pellucid, undulate, at times fimbriate, lobed or fissured with age; context fleshy, fragile when dry, white, often partially translucent; tubes decurrent, concolorous, 1–2 mm. long, 4–6-angled, mouths very variable in size, 1–2.5 × 3–7 mm., smaller near the margin, edges thin, but apparently firm, at length splitting into irregular teeth; spores ellipsoid, 9–12 × 4–5 μ; stipe lateral, concolorous, hispid-tomentose, 0.5–1 cm. long, 2–5 mm. thick, usually dilated at the base.

Frequent on dead wood in the warmer portions of the Gulf states.

3. HEXAGONA CUCULLATA (Mont.) Murrill

Pileus reniform, convex, umbonate-sessile, 3–6 × 6–8 × 0.2 cm.; surface glabrous, often radiate-striate, cream-colored to ochraceous, plane or marked with two or three broad undulations from center to margin, which is thin, entire, irregularly undulate or lobed and deflexed when dry; context fleshy-tough, white, 0.5 mm. thick; tubes ochraceous to dark-fulvous, hexagonal, not radially elongate, very variable in size, 1.5–3.5 mm. long, 1–3 mm. wide, edges thin, finely denticulate; spores ellipsoid, 14 × 7 μ; stipe a mere scutate disk nearly a centimeter in breadth.

Occasional on dead wood in the southeastern states.

12. MICROPORELLUS Murrill

Hymenophore thin, annual, epixylous, usually flabelliform, stipitate, the stipe variously attached and sometimes much reduced; surface anoderm, multizonate; context thin, white, fibrous, rigid and fragile when dry; tubes very minute, regular, thin-walled, fragile when dry; spores smooth, hyaline.

1. MICROPORELLUS DEALBATUS (Berk. & Curt.) Murrill

Pileus thin, coriaceous, slightly flexible but easily broken, flabelliform or spatulate, conchate, 2–6 × 3–7 × 0.1–0.2 cm.; surface finely tomentose to glabrous, hirtose behind, radiate-striate, dealbate, the zones often light-fulvous; margin very thin, sterile, sericeous, undulate to lobed or cleft, inflexed and often splitting when dry; tubes white to isabelline within, scarcely a mm. in length, mouths minute, angular, 8–10 to a mm., edges thin, entire, glistening, whitish when young, becoming discolored; stipe variable, often wanting, 0–7 cm. long, 2–7 mm. thick, scutate at the base, expanding into the pileus, laterally attached, rarely eccentric, usually compressed, with surface and substance resembling that of the pileus.

Common throughout on dead wood, especially on buried wood, and ranging northward into Kentucky and Missouri. The form described as *P. mutabilis* is by far the most common, and *P. dealbatus* appears quite different. Further study of the genus is desirable.

13. POLYPORUS (Micheli) Paulet

Hymenophore annual, epixylous, small and simple, very rarely large and compound; stipe central, eccentric or lateral, much reduced at times in a few species, often partly or wholly brown or black; surface usually smooth, the margin at times ciliate; context white or yellowish, fibrous, tough to corky; hymenium porose, at times alveolate; spores smooth, hyaline.

Stipe pallid or light-brown, centrally attached, not darker than the pileus.
  Margin of pileus devoid of cilia.
    Pileus not trumpet-shaped.
      Pileus less than 2 cm. in diameter, ochraceous; tubes 2 to a mm., decurrent to the base of the stipe. 1. *P. delicatus.*
      Pileus more than 2 cm. in diameter.
        Pileus reniform, irregular. 2. *P. fractipes.*

Pileus circular, regular.
Tubes decurrent, very short, entire; pileus dark-purple, ornamented here and there with paler radiating lines, finely tomentose, becoming glabrous. 3. *P. dibaphus.*
Tubes not decidedly decurrent, denticulate when mature; pileus yellowish to smoky-black, villose, at length glabrous. 4. *P. Polyporus.*
Pileus trumpet-shaped. 5. *P. confusus.*
Margin of pileus ornamented with cilia, which often disappear with age.
Tubes alveolar; stipe setulose or squamulose.
Pileus smooth, pellucid, fragile. 6. *P. arculariellus.*
Pileus fuscous-squamulose to glabrous, opaque. 7. *P. arcularius.*
Tubes not alveolar; stipe glabrous. 8. *P. Tricholoma.*
Stipe wholly or partly black or fuliginous, variously attached, usually darker than the pileus.
Pileus squamose, very large, flabelliform; tubes large, alveolar. 9. *P. caudicinus.*
Pileus glabrous; tubes punctiform.
Stipe ivory-black below; pileus usually ochraceous, scarcely depressed, margin even, not becoming extremely thin. 10. *P. elegans.*
Stipe smoky-black below; pileus usually chestnut-colored, depressed at the center or behind, margin usually very thin and irregular. 11. *P. fissus.*

1. POLYPORUS DELICATUS Berk. & Curt.

Pileus circular, irregular, 1.5 × 1.25 × 0.1–0.3 cm.; surface ochraceous, very smooth, evenly tomentose; margin thin, acute, undulate, inflexed; context pallid, soft and elastic; tubes decurrent to the base, concolorous, mouths angular, 2 to a mm., pale-yellowish-orange when dry, dissepiments thin, quite collapsed in the single type specimen; stipe central, short, concolorous above, hard, black and radicate below.

One small specimen is at Kew, found on dead wood in Alabama. It has the appearance of *P. fractipes* above, but is firmer, with central stipe and tubes far larger and different in color.

2. POLYPORUS FRACTIPES Berk. & Curt.

Pileus reniform, irregular, about 5 cm. broad; surface ochraceous, rugose, tomentose, hispid in some places; tubes very small, 5 to a mm.; stipe irregularly distorted, adnate behind at times, pulverulent, 2.5–4 cm. long, 4–9 mm. thick.

Collected a few times in South Carolina and Louisiana. According to some, *P. humilis* Peck is not distinct.

3. POLYPORUS DIBAPHUS Berk. & Curt.

Pileus circular, regular, convex, 2.5–3 × 0.05–0.1; surface dark-purple, finely tomentose, becoming glabrous, marked here and there with pale, radiating lines; margin thin, acute, entire, fertile; context white, membranous; tubes decurrent, ochraceous, very short, mouths angular, 4–5 to a mm., edges thin, becoming dentate; stipe central, slender, even, slightly darker, rough, pruinose below, 3 cm. long, 3 mm. thick.

Collected once on dead wood in Alabama.

4. POLYPORUS POLYPORUS (Retz.) Murrill

Pileus circular, convex to plane, slightly umbilicate at times, 2–8 × 0.2–0.4 cm.; surface fuliginous, more rarely yellowish-brown, hispid-squamulose to minutely hispid; margin at first inflexed, thin, fimbriate, often becoming wavy or lobed; context milk-white, membranous, 1–3 mm. thick; tubes adnate, white to pallid, 1–2 mm. long, mouths circular, regular, 2–3 to a mm., edges at first thick, becoming thin and often dentate with age; spores cylindric, subcurved, 7–8 × 2–3 μ; stipe central, solid, woody, equal, squamulose, avellaneous, not black at the base, 2–3 cm. long, 3–7 mm. thick.

Occasional northward on fallen decayed wood of deciduous trees.

5. POLYPORUS CONFUSUS Mass. Kew. Bull. 1910: 250. 1910

Pileus coriaceous, deeply infundibuliform, 5–6 cm. broad; surface glabrous, reddish-brown or gilvous; tubes short, minute, unequal, decurrent, yellowish; spores cylindric-ellipsoid, subarcuate at each end, hyaline, 12–14 × 4–5 μ; stipe central, straight or curved, about 5 cm. long.

Described from specimens collected on a fallen dead log near St. Martinsville, Louisiana, by Langlois in 1889, and sent by Ellis to Cooke for determination, who said it was perhaps *P. craterellus* Berk. & Curt. or near it.

6. POLYPORUS ARCULARIELLUS Murrill

Pileus very thin, circular, umbilicate, 2 × 0.1 cm.; surface smooth, orange-yellow to brown in the type specimen; margin thin, somewhat irregular, beautifully ciliate; context pallid, membranous, translucent; tubes ochraceous when dry, very short, mouths large, angular, oblong, 2 to a mm., edges thin; stipe central, thicker below, setulose, darker than the pileus, 2 cm. long, 2 mm. thick.

Found once on dead wood in North Carolina. It is very near *P. arcularius*.

7. POLYPORUS ARCULARIUS (Batsch) Fries

Pileus circular, convex, umbilicate, 1–2.5 × 0.1–0.2 cm.; surface azonate, concentrically rugose when dry, fuscous-squamulose to fulvous and nearly glabrous; margin acute, ciliate-dentate, straight, inflexed on drying; context white, membranous; tubes slightly decurrent, rather firm, white to brownish, 1–2 mm. long, mouths large, oblong-rhomboid, 1–2 to a mm., edges thin, elongate, denticulate; spores cylindric, pointed at the ends, 2-guttulate, copious, 7–8 × 1.5–2.5 μ; stipe central, slender, even, fuscous-gray to fulvous, subsquamulose to glabrous above, hispid-tomentose at the base, 2–4 cm. long, 2–3 mm. thick.

Common throughout on dead branches and trunks of various trees. *P. arculariformis* Murrill may be a depauperate form of this species.

8. POLYPORUS TRICHOLOMA Mont.

Pileus circular, convex to infundibuliform, usually cespitose, 1.5–4 × 0.05–0.2 cm.; surface white or pallid to ochraceous or reddish-brown, azonate, fibrillose to glabrous; margin straight or inflexed, conspicuously ornamented with rigid hairs, or cilia, 2 mm. long and of uncertain duration; context pallid, membranous, tough; tubes slightly decurrent, white to pallid, 0.5–1 mm. long, mouths angular, 5 to a mm., edges thin, dentate, elongate; spores ellipsoid, 2–2.5 × 6–7 μ; stipe central, equal, glabrous, concolorous, very slender, 1.5–2.5 cm. long, 1–1.5 mm. thick.

Frequent near Austin, Texas, on dead sticks and logs in woods.

9. POLYPORUS CAUDICINUS (Scop.) Murrill

Hymenophore of immense size, reaching 50 cm. in breadth and 3 cm. in thickness, usually found in imbricate masses projecting from the trunks of living trees; pileus subcircular and umbilicate when young, soon becoming flabelliform and explanate; surface ochraceous to fulvous, covered with broad, appressed, darker scales, which are very close together in young specimens; margin involute, thin, entire; context fleshy-tough, juicy, milk-white, very thick, odor strong; tubes decurrent, white or pale-yellowish, very short, mouths large, alveolar, 1 mm. or more in diameter, edges thin at maturity, toothed at an early age, becoming lacerate; spores broadly ovoid, 12 × 5 μ; stipe eccentric

to lateral, obese, reticulate above, clothed at the base with short, dark-brown or black, velvety tomentum, often reduced, variable in length.

Occasional northward on decayed trunks of various deciduous trees, appearing in the spring. This fungus is one of the worst enemies of shade trees in Europe, but it is fortunately too rare as yet in this country to be dangerous.

10. POLYPORUS ELEGANS (Bull.) Fries

Pileus flabelliform to subcircular, scarcely depressed behind, convex or nearly plane, 2–6 × 3–10 × 0.2–1 cm.; surface distinctly radiate-striate, pruinose when young, becoming glabrous and pale-ochraceous at maturity; margin thin, at first inflexed, often becoming wavy or much lobed and folded with age, not ciliate; context white or pallid, corky, 1–5 mm. thick; tubes pale-avellaneous, 1–3 mm. long, cylindric, mouths angular to subcircular, entire, at first white, glistening, pale-umbrinous with age, 4–5 to a mm., edges thin, entire; spores oblong, 7–8 × 3–3.5 μ; stipe eccentric or lateral, rarely central, woody, smooth, pallid above, abruptly black and scutate below, 1–4 cm. long, 2–5 mm. thick.

Occasional in the southern Appalachians on fallen branches and trunks of deciduous trees.

11. POLYPORUS FISSUS Berk.

Pileus flabelliform to subcircular, often depressed at the disk or behind, convex, very variable in size, 5–15 × 7–20 × 0.3–1 cm.; surface glabrous, minutely radiate-striate, bay or fuliginous, rugose on the disk; margin thin, fertile, wavy or lobed, often splitting with age; context corky, pallid, 2–8 mm. thick; tubes white to yellowish-brown, decurrent, 2 mm. long, cylindric, slender, mouths subcircular, very minute, 6–7 to a mm., edges thin, entire, becoming elongate with age; stipe eccentric, varying to central or lateral, usually tapering above, fuliginous to nearly black, pruinose, rugose, 2–6 cm. long, 0.5–2 cm. thick.

Frequent in the southern Appalachians on fallen dead wood of deciduous trees.

14. ABORTIPORUS Murrill

Hymenophore annual, tough, humus-loving; stipe normally central, often obsolete; context yellowish-white, duplex, spongy above, woody below, tubes thin-walled, mouths polygonal; spores smooth, hyaline.

1. ABORTIPORUS DISTORTUS (Schw.) Murrill

Pileus normally thin, plane or depressed, circular and centrally stipitate when properly developed, but often aborted and very irregular, varying to entirely resupinate forms, 6–13 cm. in diameter, 0.3–1 cm. thick; surface conspicuously and compactly tomentose, anoderm, azonate, smooth, white to alutaceous; margin thin, undulate to lobed, concolorous; context soft and spongy above, hard and woody below, white or isabelline, 3–5 mm. thick; tubes annual, decurrent, white, 1–5 mm. long, mouths irregular, variable, 2–3 to a mm., edges thin, entire to dentate; spores subglobose, 5–7 μ long; stipe central, unequal, very variable, often obsolete, resembling the pileus in surface and context.

Frequent throughout about stumps and buried wood of deciduous trees.

15. SCUTIGER Paulet

Hymenophore simple, terrestrial, annual, mesopous, usually bright-colored; surface anoderm, variously decorated; context white, rarely colored, fleshy to tough, rigid and fragile when dry; hymenium porose, white or colored, tubes thin-walled; spores smooth or rarely echinulate, hyaline.

Surface of pileus squamose.	
Pileus yellow.	1. *S. Ellisii.*
Pileus brown.	2. *S. retipes.*
Surface of pileus glabrous or tomentose.	
Pileus yellow to red.	3. *S. laeticolor.*
Pileus blue when fresh, changing to brown on drying.	4. *S. caeruleoporus.*
Pileus gray; stipe gray.	5. *S. griseus.*
Pileus brown; stipe dark-purple.	6. *S. persicinus.*

1. SCUTIGER ELLISII (Berk.) Murrill

Pileus reniform, convex, cespitose, 12–15 cm. broad, 1–2 cm, thick; surface sulfur-yellow with a greenish tint, very rough. with broad, floccose, imbricate scales; margin thick, concolorous, inflexed; context white or slightly yellowish, fleshy, firm, rather hard when dry, with a strong unpleasant odor when fresh, 1 cm. or more thick; tubes subdecurrent, 3–5 mm. long, mouths large, 1–2 to a mm., irregular, angular, edges thin, white to yellowish, changing to greenish where wounded; spores ovoid, smooth, 9 × 6 μ; stipe lateral or eccentric, slightly flattened, irregularly roughened, solid, subreticulate, dark-yellow, hard and corky within, 7–8 cm. long, 4–5 cm. thick.

Found rarely on clayey soil in low woods in South Carolina and Alabama.

2. SCUTIGER RETIPES (Underw.) Murrill

Pileus reniform to circular, convex, 6–15 cm. broad, 1–2.5 cm. thick; surface umbrinous to fuliginous, appressed tomentose, finely areolate-rimose, appearing papillate when dry; margin acute, concolorous, inflexed when dry; context fleshy, white, 2 cm. thick when fresh, becoming quite thin on drying; tubes decurrent half the length of the stipe, large, shallow, 1–2 mm. broad, mostly hexagonal, edges thin, whitish, finely lacerate; stipe eccentric, yellowish-white toward the base, white and fleshy within, 4–6 cm. long, 2 cm. or more thick.

Occasional on the ground in pine woods in North Carolina and Alabama.

3. SCUTIGER LAETICOLOR Murrill

Pileus circular in outline, often irregular, convex, depressed at the center, 10–20 cm. broad, about 1 cm. thick; surface smooth, becoming glabrous, pale-dingy-yellow when fresh, brick-colored to purplish-red in old dried plants; margin acute, inflexed at first, irregularly undulate; context fleshy-tough, homogeneous, pale-rose-colored, 5–10 mm. thick; tubes decurrent, white, becoming dark-orange within and without, 1–2 mm. long, mouths subcircular or angular, 5 to a mm., edges thin, fimbriate; spores ovoid, copious, 5–6 × 4 μ; stipe short, thick, increasing upward, central or eccentric, 2–3 cm. long, 1–3 cm. thick, resembling the pileus in color, but solid, firm and tough, with darker flesh.

Occasional on the ground in woods in South Carolina and Alabama.

4. SCUTIGER CAERULEOPORUS (Peck) Murrill

Pilei gregarious or cespitose; pileus broadly convex, circular in outline, 2.5–5 × 0.7–1 cm.; surface subtomentose, hygrophanous when fresh, isabelline to fulvous; context fleshy, fragile, white, becoming yellowish-white when dry; tubes decurrent, short, 3–5 mm. long, grayish-blue when fresh, becoming latericeous within in dried specimens, mouths angular, irregular, 2–3 to a mm., edges thin, uneven, toothed, grayish-blue when fresh, becoming bay in dried specimens; stipe central or eccentric, solid, concolorous or tinged with the color of the pores, 4–5 cm. long, about 5 mm. thick.

Occasional on the ground in woods in western North Carolina. *Scutiger holocyaneus* (Atk.) Murrill is not distinct.

5. SCUTIGER GRISEUS (Peck) Murrill

Pileus circular, often irregular, convex, 7–12 cm. broad, 1 cm. or less thick; surface glabrous or minutely tomentose, cinereous, slightly darker towards the center; margin thin, concolorous, often incurved on drying, irregular, undulate to lobed; context soft-fleshy, rosy-gray, about 5 mm. thick; tubes slightly decurrent, 1–2 mm. long, whitish-stuffed when young, white to pale-umbrinous within, mouths subangular, unequal, 2–4 to a mm., edges thin, entire to fimbriate, lacerate with age, white when young, becoming gray or umbrinous; spores subglobose, echinulate, 5–6 × 4.5–5 μ; stipe central, thick, short, bulbous at the base, with surface and substance resembling that of the pileus but darker in color, 4–5 cm. long, 1–1.5 cm. thick.

Occasional on the ground in woods in Alabama.

6. SCUTIGER PERSICINUS (Berk. & Curt.) Murrill

Pilei confluent; pileus soft, slightly elastic, pulvinate, often oblique, very thick, somewhat depressed, 10–25 cm. broad, 1–2 cm. thick; surface fulvous-brown, becoming purple at times, short-tomentose; margin lobed or undulate, very obtuse; context white, with black lines marking the seasons of growth in dried specimens, watery-spongy, reddish, dark-purple in the cuticle in fresh specimens, fading to pale-lavender; tubes decurrent, white when fresh, brownish-black in dried specimens, 2–3 mm. long, mouths angular, 2 to a mm., edges thin, lacerate; stipe central, thick, conic, dark-purple, 5 cm. long, 4–8 cm. thick.

Described from specimens collected by Ravenel at the base of trunks in pine woods in South Carolina. The remains of the types at Kew do not seem to fit the description. Splendid specimens recently collected at Chapel Hill, North Carolina, by Mr. Totten and sent to me by Prof. Coker are described as "cespitose in pine woods, reaching 14 cm. broad, pale-orange-yellow to cinnamon-buff; context soft and spongy, white to pale-yellow, with pleasant taste and acid odor; tubes small, extremely shallow, only 1 mm. long, decurrent, white, changing to pale-yellow; spores ellipsoid, hyaline, 4–4.5 × 2.5–4 μ; stipe whitish to buff, about 6 cm. long and 3 cm. thick." These specimens have assumed purplish tints in drying.

16. GRIFOLA (Micheli) S. F. Gray

Hymenophore large, annual, stipitate, compound, intricately branched or lobed, humus-loving or epixylous, rarely terrestrial,

usually found at the base of a tree-trunk; surface smooth, pallid to gray or brown; context white, fleshy or fleshy-tough, rigid and fragile when dry; tubes large, irregular, thin-walled, becoming friable or laciniate with age; spores hyaline, smooth or rarely verrucose.

Hymenium ochraceous, becoming dirty-yellow with age; plants terrestrial, irregularly confluent, olivaceous to greenish-yellow. 1. *G. flavovirens.*
Hymenium at first fuliginous, becoming paler. 2. *G. Sumstinei.*
Hymenium white or pallid from the first.
  Surface of pileus gray or grayish-brown to coffee-colored; stipe intricately branched; pileoli very numerous and small. 3. *G. frondosa.*
  Surface of pileus pallid or alutaceous; stipe not intricately branched, lobes usually few in number and comparatively large. 4. *G. Berkeleyi.*

1. GRIFOLA FLAVOVIRENS (Berk. & Rav.) Murrill

Pileus at first simple and centrally stipitate, becoming imbricate-multiplex when fully developed, 8–20 cm. in diameter; pileoli soft, fleshy, fragile when dry, circular to flabelliform, pulvinate or depressed to applanate, 5–10 cm. broad, 5–8 mm. thick; surface sordid-yellow, with yellowish-green zones, becoming dull-yellowish-green, finely tomentose to subglabrous; margin irregular, undulate to lobed, concolorous; context fleshy, very fragile when dry, 2–4 mm. thick, white to yellowish; tubes very decurrent, yellow to yellowish-green, 3–5 mm. long, mouths irregular, circular to sinuous, 1–2 to a mm., at first milk-white, becoming dirty-yellow, edges thin, fragile, lacerate with age; spores subglobose, smooth, 3–4.5 μ; stipe central or eccentric, pallid, 3–6 cm. long, 1–1.5 cm. thick, becoming tubercular and connate-ramose at maturity.

Frequent on the ground in woods throughout. Very near *P. cristatus* of Europe. *Grifola poripes* (Fries) Murrill is distinct and doubtful.

2. GRIFOLA SUMSTINEI Murrill

A very large plant resembling *G. frondosa* in habit and general appearance, but with fewer and broader pileoli, darker surface, and darker hymenium. Pileus imbricate-multiplex, 20 × 30 cm.; pileoli flabelliform to spatulate, 6–8 × 6–8 × 0.3–0.5 cm.; surface radiate-rugose, finely tomentose, light- to dark-brown; margin very thin, fissured and strongly inflexed when dry; context white, fibrous, fleshy-tough to almost leathery, 0.3 cm.

thick; tubes 0.2 cm. long, 7 to a mm., at first fuliginous, becoming pallid at maturity, polygonal, irregular, edges very thin and fragile, becoming lacerate; spores globose, smooth, copious, 5 μ; stipe tubercular, woody, blackish below, connate-ramose, lighter-colored, passing insensibly into the pileoli above.

Occasional about old stumps and trunks of deciduous trees in Louisiana. *P. giganteus* of Europe is very similar in appearance.

3. GRIFOLA FRONDOSA (Dicks.) S. F. Gray

Pileus imbricate-multiplex, 15–40 cm. in diameter; pileoli very numerous, branching from a common trunk, imbricate or confluent, variable in size and shape, dimidiate to flabelliform, 1.5–6 cm. broad; surface smoky-gray, fibrillose, radiate-striate; margin thin, undulate or lobed, strongly inflexed when dry; context white, very thin, tough, fragile, having the odor of mice; tubes white, 2–3 mm. long, mouths circular and regular when young, 3 to a mm., often large and angular with age, edges white, thin, entire to lacerate; spores subglobose to ellipsoid, smooth, hyaline; stipe tubercular, white, connate-ramose.

Occasional in the southern Appalachians at the base of oak trees, causing serious decay. Edible when young.

4. GRIFOLA BERKELEYI (Fries) Murrill

Pileus imbricate-multiplex, 15–50 cm. broad, 10–20 cm. high; pileoli very broad, applanate to infundibuliform, thin, 5–15 cm. broad, 5–15 mm. thick; surface white to obscurely alutaceous, subtomentose, rugose-undulate; margin acute, undulate to lobed, sterile, often inflexed; context white, tough, fragile when dry, homogeneous, milky in young plants, 5–10 mm. thick; tubes decurrent, white, unequal, 2–5 mm. long, mouths angular, about 1 mm. broad, edges soft, white, entire, very fragile when dry; spores globose, roughly echinulate, 6–8 μ; stipe short, tubercular, 5–10 cm. thick.

Occasional northward at the base of oak trees, causing serious decay.

17. PYCNOPORUS P. Karst.

Hymenophore annual, sometimes reviving, epixylous, sessile, dimidiate, simple or imbricate, rarely pseudo-stipitate; surface anoderm, slightly pelliculose at times, zonate or azonate, bright- or dull-red; context red, soft-corky to punky; hymenium concolorous, tubes small, firm, thin-walled; spores smooth, hyaline.

Pileus thick, smooth, opaque; plant abundant in temperate regions. 1. *P. cinnabarinus.*

Pileus thin, often zonate, brilliant-red; plant abundant in the tropics. 2. *P. sanguineus.*

1. PYCNOPORUS CINNABARINUS (Jacq.) P. Karst.

Pileus convex-plane, dimidiate, laterally extended, reviving the second season, 4–6 × 5–10 × 0.5–1 cm.; surface azonate, rugulose, pruinose to tomentose, at length glabrous, the color changing from light-orange to cinnabar-red, often fading with age; margin acute, except in large plants, faintly zonate; context floccose, elastic, zonate, reddish; tubes nearly equaling the context, firm, miniatous within, the mouths small, 2–3 to a mm., regular, coccineous, dissepiments rather thin, entire; spores 6–8 × 2–3 μ.

Frequent in the southern Appalachians on dead wood of various deciduous trees.

2. PYCNOPORUS SANGUINEUS (L.) Murrill

Pileus thin, coriaceous, sessile or spuriously stipitate, dimidiate, conchate or reniform, imbricate, laterally connate at times, 3–5 × 4–8 × 0.4–0.6 cm.; surface zonate, finely tomentose to glabrous, bright-red, often variegated with yellowish-red zones, fading to pure-white in old specimens exposed to the sun; margin acute, finely tomentose, yellowish-red; context floccose, elastic, yellowish-red, 1–3 mm. thick; tubes annual, very short, bright-reddish-miniatous, scarcely a mm. long, mouths circular to angular, regular, minute, 3–5 to a mm., edges thin, firm, entire, concolorous with the interior; spores oblong, 3–4 × 1–2 μ.

Frequent in most of the southern states, especially along the coast and in the warmer portions, growing on any kind of dead wood.

18. AURANTIPORUS Murrill

Hymenophore large, annual, epixylous, sessile, dimidiate; surface anoderm, sodden, bibulous, reddish-orange, soon fading; context reddish-yellow, fleshy-tough to woody, juicy when fresh, rigid when dry, conspicuously zonate; tubes small, slender, thin-walled, brilliant-orange when fresh, becoming dark, resinous, and fragile on drying; spores smooth, hyaline.

1. AURANTIPORUS PILOTAE (Schw.) Murrill

Pileus sessile, often subradicate, dimidiate, convex, 8–20 × 10–40 × 1–3 cm.; surface rugose, sodden, velvety with short

hairs, ochraceous or reddish-orange, soon fading, brownish behind; margin ochraceous, sterile, tumid, becoming thinner at maturity; context melleous, tough, watery, elastic, rigid when dry, conspicuously marked with sordid zones, odor strong but not characteristic; tubes 5–10 mm. long, luteous-orange to bright-orange when fresh, becoming dark and resinous on drying, the mouths small, regular, concolorous, 4–5 to a mm., dissepiments thin, minutely fimbriate; spores 3–4 × 2–3 μ.

Frequent in North Carolina on much-decayed oak and chestnut logs. Probably not distinct from *P. croceus* Pers. of Europe.

19. LAETIPORUS Murrill

Hymenophore annual, epixylous, fleshy, anoderm, cespitose-multiplex; context cheesy to fragile, light-colored; tubes thin-walled, fragile, bright-yellow, mouths irregularly polygonal; spores smooth, hyaline.

1. LAETIPORUS SPECIOSUS (Batt.) Murrill

Hymenophore cespitose-multiplex, 30–60 cm. broad; pileus cheesy, not becoming rigid, reniform, very broad, more or less stipitate, 5–15 × 7–20 × 0.5–1 cm.; surface finely tomentose to glabrous, rugose, anoderm, subzonate at times, varying from lemon-yellow to orange, fading out with age; margin thin, fertile, concolorous, subzonate, finely tomentose, undulate, rarely lobed; context cheesy, very fragile when dry, yellow when fresh, usually white in dried specimens, 3–7 mm. thick; tubes annual, 2–3 mm. long, sulfur-yellow within, mouths minute, angular, somewhat irregular, 3–4 to a mm., edges very thin, lacerate, sulfur-yellow, the color fairly permanent in dried specimens; spores ovoid, smooth or finely papillate, 6–8 × 3–5 μ.

Common throughout on living trunks of all our deciduous and evergreen trees, causing a very serious heart-rot. It is one of the best edible fungi.

20. CERRENELLA Murrill

Hymenophore thin, effused-reflexed, annual, epixylous; surface brown, zonate, anoderm, margin thin; context thin, coriaceous, brown; hymenium at first poroid, very soon becoming irpiciform, the teeth irregular and compressed; spores smooth, hyaline.

Hymenium ferruginous, unchanging. 1. *C. Ravenelii.*
Hymenium olivaceous, becoming cinereous. 2. *C. farinacea.*

1. CERRENELLA RAVENELII (Berk.) Murrill

Pileus thin, coriaceous, flexible, effused-reflexed, the reflexed portion dimidiate, imbricate, connate, 0–1 × 1–3 × 0.1 cm.; surface tomentose to finely hirsute, finely concentrically striate, fulvous-chestnut to avellaneous; margin very thin, undulate to lobed, deflexed in dried specimens; context papery thin, concolorous; tubes short, irregular, less than 1 mm. in length, 1–2 to a mm., teeth ferruginous, compressed, obtuse, somewhat seriate, irregular in size and shape, pulverulent at first; spores globose, smooth, hyaline, 6–7 μ.

Frequent throughout on decaying branches of oak and other deciduous trees.

2. CERRENELLA FARINACEA (Fries) Murrill

Pileus very thin, soft, flexible, coriaceous, entirely resupinate or effused-reflexed, the reflexed portion dimidiate, imbricate, laterally connate, 0–1 × 1–5 × 0.1 cm.; surface finely concentrically striate, tomentose, umbrinous-chestnut; margin very thin, undulate to lobed, sterile; context membranous, concolorous, papery-thin; tubes short, 1 mm. or less, irregular, 2–3 to a mm., edges thin, fimbriate to lacerate, dentate, separated at a very young stage forming an irpiciform hymenium, yellowish-green to olive and finally cinereous and farinaceous; spores 6–7 × 2.5 μ.

Frequent throughout on decaying branches of oak and other hardwood trees.

21. CORIOLOPSIS Murrill

Hymenophore thin, flexible or rigid, annual, epixylous, sessile, dimidiate, often largely resupinate; surface light-brown to bay-black, zonate, anoderm, rarely encrusted with age, hairy; margin thin; context thin, coriaceous to woody, isabelline to purplish-umbrinous, rarely almost white; hymenium concolorous; tubes small, regular, thin-walled, entire; spores smooth, hyaline.

1. CORIOLOPSIS RIGIDA (Berk. & Mont.) Murrill

Pileus thin, coriaceous, flexible to rigid, effused-reflexed, imbricate, laterally connate, the reflexed portion flabelliform, applanate or conchate, 0.5–3 × 3–6 × 0.1–0.2 cm.; surface spuriously zoned, sometimes zonate behind, concentrically furrowed at times, hirsute to hispid, nearly white to isabelline; margin very thin, pallid, undulate to lobed; context pallid to

isabelline, membranous; tubes very short, grayish-isabelline within, mouths fairly regular, circular to slightly angular, 3–4 to a mm., edges white to grayish-white and finally isabelline, rather thick at first, becoming thin, entire and slightly uneven.

Frequent on dead wood throughout.

22. FUNALIA Pat.

Hymenophore annual, epixylous, sessile, dimidiate, often semi-resupinate; surface anoderm, hairy to aculeate; context light-brown, more or less duplex, spongy above, coriaceous to woody below; tubes usually large, thin-walled, more or less lacerate; spores smooth, hyaline.

Context very thin, 1–2 mm.
- Surface villose, with simple hairs; hymenium pale-rose-tinted when fresh. — 1. *F. versatilis.*
- Surface strigose, with branched hairs; hymenium pallid to brown. — 2. *F. cladotricha.*

Context usually 3–15 mm. thick; surface villose or hirsute. — 3. *F. stuppea.*

1. FUNALIA VERSATILIS (Berk.) Murrill

Pileus effused-reflexed, imbricate, laterally connate, coriaceous, the reflexed portion 2–3 × 3–6 × 0.3–0.8 cm.; surface villose, spuriously and opaquely zoned, grayish-white, becoming umbrinous to ferruginous behind with age; margin thin, acute, concolorous, undulate to lobed; context pallid, very thin, membranous, fibrous, scarcely a mm. thick; tubes slender, 5–7 mm. long, isabelline within, mouths very variable in size and shape, 0.5–2 mm. broad, circular to angular or slightly daedaleoid, edges thin, entire to toothed, grayish-isabelline, pale-rose-tinted when fresh; spores oblong-allantoid, 6–8 × 2–4 μ.

Frequent on dead deciduous and coniferous wood in Florida and Louisiana. *Funalia villosa* (Sw.) Murrill is not distinct. *Boletus villosus* Sw. is *Coriolus pinsitus* (Fries) Pat., but Swartz' name cannot be used because *B. villosus* Huds. has priority.

2. FUNALIA CLADOTRICHA (Berk. & Curt.) Murrill

Pileus dimidiate, sometimes effused-reflexed, 2–5 × 3–8 × 0.5–0.8 cm.; surface brown, conspicuously covered with branched, strigose hairs, which are somewhat concentrically arranged in zones, especially near the margin, which is thin, concolorous, undulate; context thin, soft-corky to spongy, brown, 1–2 mm. thick; tubes long, uneven, irregular and variable in size, grayish-brown within, 3–7 mm. long, mouths angular to daedaleoid,

averaging 1 mm. in breadth, edges thin, uneven to lacerate-toothed, brown or grayish-umbrinous.

Found once on dead wood in Texas.

3. FUNALIA STUPPEA (Berk.) Murrill

Pileus corky to woody, variable in size, dimidiate, decurrent, imbricate, convex above, 2–6 × 5–12 × 0.5–3 cm.; surface ferruginous to fulvous, hirsute to villose, azonate, sulcate at times; margin thin or rounded, concolorous, entire or slightly undulate; context isabelline, zonate, corky to woody, duplex in large specimens, being softer above, 0.3–1.5 cm. thick; tubes rather long, 3–12 mm., whitish-isabelline within, mouths rather variable in size, subcircular to angular, distorted with age, averaging about 1 mm. in diameter, edges thin, fimbriate to toothed, isabelline to fuscous; spores oblong or slightly curved, 11–13 × 3.5–4 μ.

Occasional west of the Mississippi River on dead poplar trunks and less common on willow and a few other trees. Very similar in some of its forms to *Trametes hispida* Bagl. of Europe.

23. HAPALOPILUS P. Karst.

Hymenophore annual, rarely perennial, epixylous, sessile, dimidiate, simple or imbricate; surface anoderm, rarely pelliculose, zonate or azonate, usually brown and glabrous; context brown, leathery or corky, tough or rarely friable when dry; hymenium usually differently colored, tubes small, thin-walled; spores small, usually ovoid, hyaline.

Hymenium concolorous; pileus smooth, entirely devoid of zones or furrows; context soft and friable. 1. *H. rutilans.*

Hymenium differently colored; pileus rarely smooth; context rigid or corky, not friable.

Hymenium lilac-colored, tubes 1 cm. or more in length; pileus concentrically sulcate. 2. *H. sublilacinus.*

Hymenium dark-brown, tubes less than 0.5 cm. in length; pileus smooth or zonate.

Context rigid; pileus azonate or with few and indefinite markings. 3. *H. gilvus.*

Context flexible when hymenophore is expanded; pileus plainly and definitely multizonate. 4. *H. licnoides.*

1. HAPALOPILUS RUTILANS (Pers.) Murrill

Pileus thick, convex above and below, very soft, fleshy, dimidiate, usually broadly attached, more or less imbricate at

times, 2–4 × 3.5–7 × 0.5–1.5 cm.; surface smooth, anoderm, azonate, finely villose to glabrous, ochraceous-isabelline to bay-brown; margin rather thick, entire or undulate, becoming reddish-brown when bruised; context spongy, friable when dry, ochraceous-isabelline, 3–7 mm. thick; tubes rather long, slender, isabelline to pale-fulvous, 3–6 mm. long, mouths angular, averaging 3 to a mm., somewhat irregular with age, edges isabelline, whitish when young, thin, very fragile, subentire; spores ellipsoid or globose, 3 × 2.5 μ.

Occasional in North Carolina on dead deciduous wood, especially hickory.

2. HAPALOPILUS SUBLILACINUS (Ellis & Ev.) Murrill

Pileus applanate, dimidiate, 6–7 × 9–10 × 1–2 cm.; surface concentrically striate, zonate, cinereous-gray to avellaneous-fulvous; margin acute, entire; context corky, zonate, 3–5 mm. thick, bright-cinnamon-yellow to pale-fulvous; tubes long, slender, pale-umbrinous within, 5–15 mm., mouths minute, circular, regular, slightly uneven, 5 to a mm., edges obtuse, entire, lilac to umbrinous; cystidia stout, cylindric-conic, 15–20 × 4 μ.

Found only in Louisiana, growing on dead pine logs.

3. HAPALOPILUS GILVUS (Schw.) Murrill

Pileus corky, dimidiate, imbricate, applanate or conchate, 3–6 × 5–10 × 0.5–1.5 cm.; surface finely tomentose to glabrous, azonate, isabelline to fulvous, often marked with indistinct purplish-fuscous bands, rugulose to uneven; margin thin, ferruginous, entire to undulate, abruptly sterile; context ferruginous, fibrous-spongy to corky, zonate, 3–7 mm. thick; tubes short, slender, avellaneous to grayish-umbrinous within, 3–5 mm. long, often found stratified, especially in the tropics, mouths small, regular, circular to angular, 6–8 to a mm., edges at first thick, pale-ferruginous, becoming thin, entire, glistening, olivaceous-fuscous to purplish-fuscous; spores elongate-ellipsoid, 4–6 × 2–4 μ; cystidia chestnut-colored, ovate-subulate, 15–20 × 4–5 μ.

Extremely common on dead deciduous wood throughout.

4. HAPALOPILUS LICNOIDES (Mont.) Murrill

Pileus thin, coriaceous, flexible, imbricate, dimidiate, often narrowly attached, applanate or conchate, 3–6 × 4–8 × 0.2–0.5 cm.; surface multizonate, concentrically striate, finely tomentose

to partially glabrous, rather smooth, subshining, fulvous with bay zones; margin very thin, entire, ferruginous; context thin, ferruginous to fulvous, fibrous-spongy, 1 mm. thick; tubes short, 1–2 mm., fulvous, glaucous near the mouths, which are very minute, regular, circular, 7–9 to a mm., edges thick, entire, pale-ferruginous to purplish-ferruginous; spores ellipsoid or subglobose, 3–4 × 2–3 μ; cystidia subulate, chestnut-colored, 15–25 × 6 μ.

Common on dead wood in the Gulf states.

24. ISCHNODERMA P. Karst.

Hymenophore large, annual, epixylous, sessile; surface pelliculose, glabrous; context light-brown, fleshy to slightly corky, friable when dry; tubes small, thin-walled; spores smooth, hyaline.

1. ISCHNODERMA FULIGINOSUM (Scop.) Murrill

Pileus very large, subimbricate, laterally connate, effused-reflexed, often covering the entire under surface of logs, the reflexed portion applanate, 5–15 cm. long, 10 to many cm. broad, 1–2.5 cm. thick; surface pelliculose, floccose, rugose, zonate, fuliginous, ivory-black, and dark-fulvous, with a conspicuous resinous appearance; margin acute, concolorous, inflexed on drying, entire or undulate; context fleshy, becoming corky with age, very firm and rather fragile when dry, light-brown, 5–10 mm. thick; tubes pallid to umbrinous, 5–8 mm. long, mouths minute, white, angular, equal, becoming umbrinous and somewhat irregular with age, edges thin, fimbriate to lacerate; spores cylindric, subcurved, 4–6 × 1.5–2 μ.

Frequent throughout most of the region on fallen trunks of basswood, maple, and certain other trees.

25. POGONOMYCES Murrill

Hymenophore annual, epixylous, dimidiate-sessile to flabelliform, thickly covered with rigid hairs; context dark-brown, punky to corky; tubes short, thick-walled, light-brown, mouths small, circular; spores smooth, hyaline.

1. POGONOMYCES HYDNOIDES (Sw.) Murrill

Pileus dimidiate, sessile, often imbricate, conchate, 3–5 × 5–10 × 0.5–1 cm.; surface zonate, tawny-bay to nearly black, conspicuously and thickly covered with rigid, branched fibers, which

often more or less disappear with age; margin entire or undulate, pallid, acute, sterile below; context fulvous at maturity, zonate, punky to corky, 3–5 mm. thick; tubes rather long, grayish-umbrinous within, equaling the thickness of the context, mouths small, circular to somewhat angular, 3–4 to a mm., edges thick, entire, pallid to umbrinous; spores oblong, 8–10 × 3–4 μ.

Extremely common in the Gulf states on various forms of dead wood.

26. NIGROPORUS Murrill

Hymenium annual, epixylous, dimidiate-sessile to flabelliform, glabrous; context dark-brown, firm, homogeneous; tubes short, slender, thin-walled, black; spores smooth, hyaline.

1. NIGROPORUS VINOSUS (Berk.) Murrill

Pileus thin, dimidiate to reniform, imbricate, narrowly attached by a scutate disk or laterally connate and broadly decurrent, 1–3 × 3–6 × 0.1–0.3 cm.; surface zonate, finely velvety to glabrous, obscurely vinous-brown; margin yellowish when young, thin, undulate, often inflexed on drying; context rigid, tough, chestnut-colored, 1–2 mm. thick; tubes minute, short, scarcely a mm. in length, smoky-black, mouths regular, angular, 7–9 to a mm., edges thin, entire, vinous-brown, pruinose when young, blackish with age; spores allantoid, 3–4 × 1–1.5 μ.

Found once on dead wood in Georgia.

27. INONOTUS P. Karst.

Hymenophore annual, epixylous, sessile, dimidiate, simple or somewhat imbricate, variable in size; surface usually anoderm, brown, hairy or glabrous; context brown, thin and fibrous to spongy or corky; hymenium concolorous, usually covered with whitish powder in youth, tubes small, thin-walled; spores smooth, light- to dark-brown.

Hymenophore sessile.
- Hymenophore large, 10–30 cm. or more broad.
  - Surface conspicuously hirsute. — 1. *I. hirsutus.*
  - Surface glabrous.
    - Spores pale-brown. — 2. *I. dryadeus.*
    - Spores deep-brown. — 3. *I. dryophilus.*
- Hymenophore of medium size, about 5–10 cm. broad.
  - Spores deep-brown in color.
    - Context multizonate and iridescent. — 4. *I. texanus.*
    - Context neither zonate nor iridescent.

Hymenium fuliginous or black.	5. *I. juniperinus.*
Hymenium fulvous.	6. *I. perplexus.*
Spores faintly tinged with brown.	
Surface soft and spongy; hymenophores found on living shrubs, often encircling the twigs.	7. *I. amplectens.*
Surface hard and firm; hymenophores found on decaying trunks or roots.	8. *I. radiatus.*
Hymenophore substipitate.	9. *I. ludovicianus.*

1. INONOTUS HIRSUTUS (Scop.) Murrill

Pileus thick, compact, fleshy to spongy, dimidiate, sometimes imbricate, compressed-ungulate, 7–10 × 10–15 × 3–5 cm.; surface hirsute, ferruginous to fulvous, azonate, smooth; margin obtuse, velvety; context spongy-corky, somewhat fragile when dry, ferruginous to fulvous, blackening with age, 1–1.5 cm. thick; tubes slender, about 1 cm. long, ferruginous within, mouths angular, 2–3 to a mm., ferruginous to bay, blackening with age, edges thin, very fragile, lacerate; spores broadly ovoid, smooth, thick-walled, deep-ferruginous, 2-guttulate, 7–8 × 5–6 μ.

Occasional from North Carolina to Florida, chiefly on living trunks of oak. A very abundant and destructive enemy of shade trees in Europe.

2. INONOTUS DRYADEUS (Fries) Murrill

Hymenophore of immense size, dimidiate, rarely circular, usually imbricate, applanate or depressed above, convex below, fleshy to spongy-corky, rather fragile when dry, 15–30 × 25–65 × 3–5 cm.; surface very uneven, azonate, opaque, hoary-isabelline, anoderm to very thinly encrusted, subshining and bay; margin thick, pallid, entire to undulate, weeping; context thick, zonate, subglistening, ferruginous-isabelline to fulvous, 2.5–4 cm. thick; tubes grayish-umbrinous to fulvous within, 5–15 mm. long, slender, very fragile, mouths whitish when young, becoming somewhat resinous in appearance and finally bay-brown, at first minute, circular, becoming angular, 4 to a mm., edges thin, fimbriate to lacerate, deeply splitting and separating with age; spores subglobose, smooth, 8–10 × 7–8 μ, the outer wall hyaline, the inner membrane brown; cystidia 15–35 × 5–9 μ.

Occasional west of the Mississippi River as a root parasite of various species of oak, the large hymenophores appearing near the base of the trunk. Attention is called to recent studies of this species and the next by W. H. Long.

3. INONOTUS DRYOPHILUS (Berk.) Murrill

Pileus thick, unequal, unguliform, subimbricate, rigid, 7–8 × 10–14 × 2–3 cm.; surface hoary-flavous to ferruginous-fulvous, becoming scabrous and bay with age; margin thick, usually obtuse, sterile, pallid, entire or undulate; context ferruginous to fulvous, zonate, shining, 3–10 mm. thick; tubes slender, concolorous with the context, about 1 cm. long, mouths regular, angular, 2–3 to a mm., glistening, whitish-isabelline to dark-fulvous, edges thin, entire to toothed; spores subglobose, smooth, deep-ferruginous, 6–7 μ; cystidia scanty and short.

Occasional throughout on living or dead oak trunks, causing serious decay.

4. INONOTUS TEXANUS Murrill

Pileus ungulate, attached by the vertex, 3 × 5 × 2–4 cm.; surface hoary-isabelline to fuliginous, finely tomentose, concentrically and radially rimose, especially with age, the separated areas imbricate; margin thick to very obtuse, pallid; context corky, narrowly concentrically zonate, fulvous to umbrinous, iridescent, 1 cm. thick in young specimens, very thin in old ones; tubes 1–3 cm. long, 2–3 to a mm., fulvous to tawny-chestnut, mouths polygonal, pallid to fulvous, darker with age, edges thin, entire; spores ovoid, smooth, very dark-brown, 1–2-guttulate, 10 × 8 μ.

Occasional on trunks of living mesquite trees in Texas.

5. INONOTUS JUNIPERINUS Murrill

Pileus firm, corky, sessile, narrowly attached, flabelliform, concave above, convex below, 6 × 5 × 1 cm.; surface glabrous, somewhat rugose, subzonate near the margin, fulvous-ferruginous, slightly marked with black; margin very thin, broadly sterile, glabrous, entire to somewhat eroded, fragile, pure-black in dried specimens; context fleshy-tough, fragile when dry, subshining, pale-ferruginous to umbrinous-fulvous, 5–7 mm. thick; tubes short, very fragile, fulvous within, 1–2 mm. long, punctiform near the margin, mouths angular, 4 to a mm., glistening, chestnut-colored to black, edges thin, entire to fimbriate-dentate; spores globose, smooth, dark-brown, 3.5–5 μ.

Occasional on roots of red cedar in Texas.

6. INONOTUS PERPLEXUS (Peck) Murrill

Pileus spongy-fleshy, fibrous, sessile, dimidiate to flabelliform, often narrowly attached, usually imbricate, somewhat laterally

connate, 4–6 × 5–10 × 0.5–1 cm.; surface hairy-tomentose to setose-hispid, grayish-tawny to ferruginous, azonate, smooth, anoderm, becoming somewhat glabrous and subzonate with age; margin acute, sterile, pallid, entire; context tawny-ferruginous, subzonate, 2–3 mm. thick; tubes 3–5 mm. long, brownish-ferruginous within, mouths angular to irregular, 3–4 to a mm., edges acute, fimbriate to lacerate, hoary to dark-fulvous; spores broadly ellipsoid, smooth, deep-ferruginous, 5–7 × 4–5.5 μ.

Frequent throughout, chiefly on oak. Near *P. cuticularis* of Europe.

7. INONOTUS AMPLECTENS Murrill

Pileus hemispheric, clasping, concave beneath, 1–3 cm. in diameter, 1–2 cm. thick; surface soft, velvety, dark-yellowish-orange; margin at first obtuse, entire, straw-colored, becoming thin, undulate or toothed, deflexed and concolorous; context soft, spongy-fibrous, ferruginous; hymenium at first honey-yellow, becoming umbrinous; tubes 2–4 mm. long, 2–4 to a mm., larger by confluence, umbrinous within, mouths at first closed by a yellowish membrane, subcircular, regular, entire, becoming large, irregular, coarsely toothed and concentrically split into irpiciform plates; spores ellipsoid, slightly curved, smooth, melleous, 1–2-guttulate, 5–6 × 2.5–3.5 μ.

Found once on living twigs of *Asimina* in Georgia.

8. INONOTUS RADIATUS (Sow.) P. Karst.

Pileus corky to woody, imbricate, confluent, sessile, umbonate behind, especially when young, 3–5 × 6–9 × 0.5–1 cm.; surface radiate-rugose to very uneven, minutely velvety to glabrous, fulvous to ferruginous-fuscous or almost black behind; margin thin, pallid, undulate to lobed; context subzonate, ferruginous to dark-fulvous, 1–3 mm. thick; tubes slender, grayish-umbrinous to fulvous, about 5 mm. long, mouths angular, somewhat irregular, 3–5 to a mm., edges whitish at first, becoming dark-fulvous with age, glistening, thin, fimbriate to lacerate; spores ellipsoid, luteolous, 4–6 × 3–4 μ.

Occasional in the mountains of North Carolina on decayed alder, birch, maple, and certain other deciduous trees. The usual form found on maple is quite different from the typical form on alder and birch and has been called *P. glomeratus* by Peck. The same two forms are said to occur in Europe.

9. INONOTUS LUDOVICIANUS (Pat.) Murrill, comb. nov.

Pileus applanate, undulate, radiate-rugose, cuneate and substipitate behind, reaching 20 cm. long, 15 cm. broad, and 1.5 cm. thick; surface velvety-scrupose, soft to the touch, ferruginous, margin sinuate, thin; context ferruginous, with silky luster; tubes concolorous, soft, decurrent, the mouths circular, minute, at first whitish-stuffed, becoming fuscous-ferruginous and lacerate; spores smooth, ovoid, ferruginous, $6 \times 3.5\ \mu$; cystidia none.

Described as *Xanthochrous ludovicianus* (Bull. Soc. Myc. Fr. 24: 6. 1908.) from specimens collected at the base of dead trees near St. Martinsville, Louisiana, by Langlois. *Xanthochrous fusco-velutinus* Pat., described at the same time from the same locality, is not specifically distinct. The species is known from a few collections by Langlois in Louisiana, on dead logs and branches of *Quercus aquatica* and probably other deciduous trees, and was also found by C. L. Shear in Summerville, South Carolina, occurring on the base of an oak stump.

28. PHAEOLUS Pat.

Hymenophore large, irregular, annual, spongy to corky, epixylous; stipe simple, variously attached, wanting at times; surface of pileus anoderm, hispid; context ferruginous; tubes irregular, thin-walled; spores ellipsoid, smooth, hyaline; cystidia none.

1. PHAEOLUS SISTOTREMOIDES (Alb. & Schw.) Murrill

Pileus spongy, circular, varying to dimidiate or irregular, 15–20 cm. broad, 0.5–2 cm. thick; surface setose-hispid to strigose-tomentose and scrupose in zones, ochraceous-ferruginous to fulvous-castaneous or darker, quite uneven, somewhat sulcate, obscurely zonate; margin yellow, rather thick, sterile; context very soft and spongy, fragile when dry, sometimes indurate with age, flavous-ferruginous to fulvous, 0.3–0.7 mm. thick; tubes short, 2–5 mm. long, flavous within, mouths large, irregular, averaging 1 mm. in diameter, edges thin, becoming lacerate, ochraceous-olivaceous to fuliginous, rose-tinted when young and fresh, quickly changing to dark-red when bruised; spores ellipsoid, $7–8 \times 3–4\ \mu$; stipe central to lateral or obsolete, very irregular, tubercular or very short, resembling the pileus in surface and substance.

Common throughout on trunks, stumps, and roots of various

coniferous trees, causing a very serious reddish-brown rot of the roots and lower part of the trunk.

29. COLTRICIELLA Murrill

Hymenophore small, annual, tough, epixylous; stipe attached to the vertex of the pileus; surface of the pileus anoderm, zonate; context spongy, fibrous, ferruginous; tubes angular, one-layered, dissepiments thin; spores ellipsoid, smooth, ferruginous.

1. COLTRICIELLA DEPENDENS (Berk. & Curt.) Murrill

Hymenophore gregarious or cespitose; pileus very small, conic, pendant, vertically attached, 1–2 cm. broad, about 1 cm. thick; surface cinnamon-colored, soft, elongate-striate, sericeous, subzonate; margin acute, fibrillose; context spongy, very thin, ferruginous-fulvous, 1–2 mm. thick; tubes long, 5–8 mm., fulvous, mouths large, angular, 1–2 to a mm., smaller near the margin, edges thin, toothed, yellowish to fulvous; spores ellipsoid, smooth, ferruginous, 7–8 × 3.5–4 μ; stipe central, attached at the vertex, cylindric, gradually enlarging as it approaches the pileus, about 1 cm. long, 1–3 mm. thick, resembling the pileus in surface and substance.

Occasional on decorticated pine wood in the Carolinas. Reported on *Liriodendron* in Florida.

30. COLTRICIA (Micheli) S. F. Gray

Hymenophore annual, terrestrial or humus-loving, simple, small to medium, usually circular and central-stemmed; surface anoderm, brown, zonate or azonate; context yellowish or brown, coriaceous to spongy; hymenium concolorous, covered with yellowish or whitish powder when young; tubes thin-walled, at length fimbriate; spores smooth, rounded, yellowish-brown; cystidia rarely present.

Pileus concentrically zonate; context very thin.
- Pileus shining-cinnamon, strigose, striate, thin, flexible, slightly depressed, the margin often fimbriate or pseudociliate. — 1. *C. cinnamomea.*
- Pileus dull-rusty-cinnamon to hoary, velvety to glabrous, deeply depressed, the margin thicker and less fimbriate.
  - Tubes small, 0.5 mm. or less in diameter. — 2. *C. perennis.*
  - Tubes large, 1 mm. in diameter. — 3. *C. focicola.*

Pileus usually azonate; context rather thick and spongy.

Context duplex, soft above and woody below; hymenium beset with cystidia. 4. *C. tomentosa.*
Context homogeneous; hymenium free from cystidia.
Pileus ferruginous to fulvous, 5 cm. in diameter; surface finely tomentose; stipe swollen and soft at the base. 5. *C. obesa.*
Pileus darker, fulvous to chocolate-colored, 10 cm. in diameter; surface rough and shaggy; stipe scutate and firm at the base. 6. *C. Memmingeri.*

1. COLTRICIA CINNAMOMEA (Jacq.) Murrill

Pileus coriaceous, thin, circular, umbilicate, sometimes deeply so, 1–4 cm. in diameter, 1–2 mm. thick; surface bright-cinnamon, cinereous, shining, strigose-striate, zonate; margin undulate to slightly lobed, fimbriate, concolorous; context membranous, concolorous, less than a mm. thick; tubes pale-umbrinous within, 1–2 mm. long, slightly decurrent, mouths rather large, angular, ferruginous to fulvous, 2–3 to a mm., edges thin, fimbriate-dentate, collapsing with age; spores ellipsoid, pale-yellowish-brown, smooth, 6–8 × 4–6 μ; stipe central, velvety, reddish-fuscous, nearly equal, 2–4 cm. long, 3–5 mm. thick.

Common throughout on mossy soil or wood almost reduced to humus.

2. COLTRICIA PERENNIS (L.) Murrill

Pileus coriaceous, circular, infundibuliform, 3–6 cm. broad, 1.5–3 mm. thick; surface zonate, short-tomentose, substriate, ferruginous to cinereous, the zones sometimes glabrous and chestnut-colored; margin very thin, entire to lacerate, inflexed when dry; context very thin, concolorous, scarcely a mm. thick; tubes short, grayish-umbrinous within, 1–3 mm. long, mouths small, angular, 2–4 to a mm., whitish when young, becoming fulvous, edges thin, dentate to lacerate, soon collapsing; spores ovoid, smooth, pale-yellowish-brown, 4–6 × 2–3.5 μ; stipe bulbous and often united with that of neighboring plants at the base, tapering upward, velvety, ferruginous to fulvous, solid, corky, 3–5 cm. long, 2–5 mm. thick.

Occasional in the mountains of North Carolina on exposed or burnt soil in woods, and possibly ranging as far southward as Alabama.

3. COLTRICIA FOCICOLA (Berk. & Curt.) Murrill

Pileus membranous, circular, umbilicate, 3–6 cm. in diameter, 0.5–1 cm. thick; surface velvety, cinnamon to cinereous, multizonate; margin thin, entire or undulate; context very thin,

ferruginous to fulvous, scarcely 1 mm. in thickness; tubes long, ample, ferruginous to fulvous within, 5–8 mm. long, mouths 1–2 mm. in diameter, angular, fulvous, edges thin, toothed, becoming lacerate and collapsed with age, causing the pores to appear much smaller than they really are; spores oblong-ellipsoid, smooth, pale-yellowish-brown, abundant, 1-guttulate, $6 \times 3.5\ \mu$; stipe central, cylindric, slightly enlarged at the base, velvety, ferruginous to fulvous, solid, corky, 2–3 cm. long, 3–5 mm. thick.

Frequent on burnt soil in woods from North Carolina to Florida.

4. COLTRICIA TOMENTOSA (Fries) Murrill

Pileus circular, varying to dimidiate, sometimes cespitose, 6–12 cm. in diameter, 3–5 mm. thick; surface ferruginous-fulvous, azonate, rarely subzonate, tomentose, plane or depressed at the center; margin lighter in color, sterile, acute, entire to lobed; context duplex, soft-corky, concolorous and spongy above, corky-woody, fibrous and flavous-ferruginous below, 2–4 mm. thick; tubes sometimes decurrent, about 1 mm. long, avellaneous within, mouths small, equal, angular, 3–5 to a mm., covered at first with a whitish substance, edges white, entire, becoming grayish-umbrinous, very thin and toothed with age; spores ellipsoid, smooth, pale-yellowish-brown, $5–7 \times 2–4\ \mu$; cystidia abundant, more or less curved, ovate-lanceolate at first, becoming more slender, fulvous-brown, $50–75 \times 6–15\ \mu$; stipe central to lateral or wanting, unequal, obese, fulvous, tomentose, resembling the context within, 0–5 cm. long, 5–15 mm. thick.

Common throughout under coniferous trees, usually attached to coniferous wood.

5. COLTRICIA OBESA (Ellis & Ev.) Murrill

Hymenophore simple or cespitose, sometimes connate; pileus circular, convex to depressed, 4–6 cm. broad, 5–10 mm. thick; surface fulvous, tomentose, azonate, smooth or pelliculose; margin yellowish-cinnamon, obtuse, becoming acute, entire or undulate; context homogeneous, soft, friable, fulvous, 4–8 mm. thick; tubes short, about 1 mm. in length, pale-avellaneous within, mouths irregular, circular to radially-elongate and slightly sinuous, 0.5–1 mm. broad, edges becoming acute and slightly toothed, white to fulvous; spores ellipsoid, smooth, ferruginous, $7–8 \times 4–5\ \mu$; stipe central, spongy, tomentose, fulvous, 4–6 cm. long, 5–15 mm. thick above, enlarged below, 1–3 cm. in thickness.

Occasional on buried pine branches in North Carolina. There is little to distinguish this species from *P. Montagnei* Fries.

6. COLTRICIA MEMMINGERI Murrill

Pileus very irregular, circular to dimidiate, convex to plane or depressed, 10 × 1 cm.; surface fulvous to dark-seal-brown, ornamented with long imbricate scales of the same color; margin alutaceous, pubescent, sterile, subacute, undulate; context corky, fragile, azonate, 0.5–1 cm. thick, thinner towards the margin, concolorous; tubes adnate, 1–4 mm. long, 1–3 to a mm., umbrinous, apparently blackening with age, mouths circular and whitish when young, becoming angular, irregular and concolorous or darker with age, edges entire to dentate; spores ovoid, smooth, light-ferruginous, usually 2-guttulate, 7 × 4 μ; stipe central or eccentric, at times confluent, very short, thick, angular or flattened, dilated at the base to twice its thickness above, resembling the pileus in color, surface, and substance, 1–3 × 3–5 cm.

Found only on wet clay banks at Flat Rock, North Carolina.

31. FOMES Gill.

Hymenophore sessile, ungulate or applanate, epixylous; surface anoderm or encrusted, sulcate, rarely zonate; context white, wood-colored, or flesh-colored, corky or woody, rarely punky; tubes cylindric, usually thick-walled, stratose; spores smooth, hyaline or subhyaline.

Context flesh-colored, light-brown in faded specimens.
- Tubes 1–2 mm. long each season; spores ellipsoid. — 1. *F. roseus.*
- Tubes 3–5 mm. long each season; spores globose. — 2. *F. fraxineus.*

Context white or nearly so.
- Pileus less than 3 cm. broad. — 3. *F. scutellatus.*
- Pileus more than 3 cm. broad.
  - Pileus encrusted; surface darker than the context.
    - Pileus thin, distinctly zonate, irregular or applanate; crust brown to black. — 4. *F. annosus.*
    - Pileus thick, sulcate, ungulate, rarely applanate. — 5. *F. ungulatus.*
  - Pileus rarely encrusted; surface concolorous with the context.
    - Tubes white, concolorous, the mouths glistening. — 6. *F. populinus.*
    - Tubes smoky at maturity, darker than the context, not over 3 mm. long. — 7. *F. Meliae.*
    - Tubes light-brown, strongly contrasted with the white or yellowish context, and 1 cm. or more in length. — 8. *F. geotropus.*

1. FOMES ROSEUS (Alb. & Schw.) Cooke

Pileus woody, dimidiate, varying from conchate to ungulate, often imbricate and longitudinally effused, 2–4 × 6–8 × 0.5–3 cm.; surface rugose, subfasciate, slightly sulcate, rosy or flesh-colored, becoming gray or black with age; margin acute, becoming obtuse, sterile, pallid, often undulate; context floccose-fibrous to corky, rose-colored, 0.2–2 cm. thick; tubes indistinctly stratose, 1–2 mm. long each season, mouths circular, 3–4 to a mm., edges obtuse, concolorous; spores ellipsoid, smooth, thick-walled, subhyaline, 3.5 × 6 μ.

Common throughout on living or dead trunks of conifers, and occasionally on deciduous trees, causing a serious rot. The variation in the form of the hymenophore from conchate to ungulate is sometimes very puzzling.

2. FOMES FRAXINEUS (Bull.) Cooke

Pileus corky to woody, dimidiate, applanate, usually imbricate, often laterally confluent, thinner in American forms, 4–10 × 6–15 × 1–6 cm.; surface velvety to glabrous, zonate at times, concentrically sulcate with age, at first white owing to a covering of fine waxy hairs, becoming bay and finally nearly black with age; margin thin or tumid, sterile, cream-colored, pulverulent with reddish blotches, becoming dark and hygrophanous when bruised; context punky, becoming corky, isabelline, tinged with carneous when fresh, 0.5–5 cm. thick; tubes indistinctly stratified, 0.5–1 cm. long each season, isabelline when old, reddish-flesh-colored in the younger layers, mouths subcircular, 4 to a mm., edges obtuse, entire, light-flesh-colored, covered at first with a white waxy coat, quickly changing to a darker color when bruised; spores subglobose, smooth, subhyaline, 6–7 × 5–6 μ.

Occasional on trunks and stumps of certain deciduous trees in Louisiana.

3. FOMES SCUTELLATUS (Schw.) Cooke

Pileus woody, dimidiate or scutellate, concave below, 0.5–0.7 × 1–1.5 × 0.3–0.5 cm.; surface rugose, tuberculose, zonate, fuscous-black; margin acute, deflexed, pallid to light-brown; context woody, indistinctly zonate, isabelline, 2–3 mm. thick; tubes indistinctly stratified, 1–1.5 mm. long each season, isabelline within, mouths subcircular to rhomboid, 4 to a mm., edges rather thin, obtuse, entire, chalk-white, becoming avellaneous.

Frequent throughout on dead branches and timbers of alder, witch hazel, and other deciduous trees and shrubs.

4. FOMES ANNOSUS (Fries) Cooke

Pileus woody, dimidiate, very irregular, conchate to applanate, 10–13 × 5–8 × 0.5–2 cm.; surface at first velvety, rugose, anoderm, light-brown, becoming thinly encrusted, zonate, and finally black with age; margin pallid, acute, becoming thicker; context soft-corky to woody, white, 0.3–0.5 cm. thick; tubes unevenly stratified, 2–8 mm. long each season, white, mouths subcircular to irregular, 3–4 to a mm., edges rather thin, entire, firm, white, unchanging; spores subglobose or ellipsoid, smooth, hyaline, 5–6 × 4–5 μ.

Common throughout on trunks and roots of various coniferous trees, and rarely on deciduous trees, causing serious decay.

5. FOMES UNGULATUS (Schaeff.) Sacc.

Pileus corky to woody, ungulate, 8–15 × 12–40 × 6–10 cm.; surface glabrous, sulcate, reddish-brown to gray or black, often resinous; margin at first acute to tumid, pallid, becoming yellowish or reddish-chestnut; context woody, pallid, 0.5–1 cm. thick; tubes distinctly stratified, 3–5 mm. long each season, white to isabelline, mouths circular, 3–5 to a mm., edges obtuse, white to cream-colored; spores ovoid, smooth, 6 μ.

Frequent throughout on living trunks of conifers and less frequent on deciduous trees growing near, causing a serious disease.

6. FOMES POPULINUS (Schum.) Cooke

Pileus corky to woody, effused-reflexed, rarely applanate, 2–4 × 5–10 × 1–3 cm.; surface anoderm, velvety, white or yellowish, usually overgrown with moss or otherwise disfigured with age; margin acute, slightly deflexed, concolorous, blackish where bruised, becoming thicker with age; context punky to corky, white to ochroleucous, 3–8 mm. thick; tubes very distinctly stratified, 1–2 mm. long each season, concolorous, with a resinous luster, mouths subcircular to angular, minute, 5–6 to a mm., edges thin, uneven, white to cremeous, glistening; spores globose, thin-walled, smooth, 3–4 μ.

Rather common throughout on living trunks of maple and certain other deciduous trees, causing decay.

7. FOMES MELIAE (Underw.) Murrill

Pileus corky, conchate or ungulate, thick and decurrent at the base, often imbricate, 3–5 × 5–8 × 1–3 cm.; surface anoderm, nearly smooth, subtomentose to glabrous, dirty-white;

margin obtuse, concolorous; context corky, pallid, indistinctly zonate, 0.5–1 cm. thick; tubes unevenly stratose, 3–6 mm. long each season, cremeous, becoming discolored, mouths circular, 5 to a mm., edges usually obtuse, firm, entire, becoming smoky-white, the hymenium cracking in all directions with age; spores oblong, 3 × 6 μ.

Occasional in the Gulf states on branches of *Melia*, *Gleditsia*, and *Fraxinus*. Closely related to the preceding species.

8. FOMES GEOTROPUS Cooke

Pileus woody, conchate, very thick behind, 6–12 × 10–20 × 2–4 cm.; surface pruinose to glabrous, roughly rugose, anoderm, azonate, irregularly concentrically undulate, stramineous to cremeous; margin tumid, pallid, brownish when bruised, slightly undulate, deflexed; context corky, pallid to isabelline, 0.5–1.3 cm. thick; tubes distinctly stratified, 0.5–1.5 cm. long each season, pale-chestnut-colored, fading out in the older layers, mouths circular, minute, 5 to a mm., edges thin, entire, rose-colored when fresh, becoming darker and discolored with age or when bruised.

Frequent at the base of living trunks of various trees in the Gulf states, causing a serious rot. "Pecky" cypress is said to be due to the effects of this fungus.

32. FOMITELLA Murrill

Hymenophore sessile, at times semiresupinate, applanate, epixylous; surface glabrous, anoderm to encrusted, sulcate with age; context woody or slightly punky, brownish-olivaceous, rarely varying to pallid; tubes minute, cylindric, usually thick-walled, more or less stratose at maturity; spores smooth, hyaline.

1. FOMITELLA SUPINA (Sw.) Murrill

Pileus rigid, corky to woody, dimidiate, thin, sessile, imbricate, plane or concave below, 4–6 × 5–10 × 0.5–1 cm.; surface finely tomentose to glabrous, azonate, smooth or rugose, varying from white to umbrinous, often blotched with purple or entirely purplish-black behind; context corky, zonate, greenish-isabelline to olivaceous, 2–6 mm. thick; tubes normally perennial, annual in many specimens, indistinctly stratose, 1–3 mm. long each season, isabelline to grayish-umbrinous within, mouths circular, rarely elongate, 5 to a mm., edges rather thin at maturity, entire but slightly uneven, isabelline to umbrinous; spores globose, smooth, 4 μ.

Very common on dead deciduous wood in most of the southern states at low elevations.

33. PYROPOLYPORUS Murrill

Hymenophore large, perennial, epixylous, sessile, ungulate or applanate; surface sulcate, usually anoderm and often rough or rimose; context woody or punky, brown; tubes brown, cylindric, stratose, usually thick-walled; spores smooth, hyaline.

Pileus thick, usually ungulate.	
Surface finally blackish and often rimose with age.	
Context fulvous, opaque; found on *Prunus*.	1. *P. fulvus.*
Context melleous, lustrous; found on *Juniperus*.	2. *P. texanus.*
Surface remaining brown, with crust entire.	3. *P. Calkinsii.*
Pileus thin, conchate or applanate.	
Pileus broadly effused, slightly reflexed or entirely resupinate.	4. *P. conchatus.*
Pileus dimidiate to flabelliform, not effused.	5. *P. Langloisii.*

1. PYROPOLYPORUS FULVUS (Scop.) Murrill

Pileus woody, triquetrous, rarely ungulate, thick and broadly attached behind, 1–3 × 5–7 × 3–8 cm.; surface smooth, very slightly sulcate, velvety, ferruginous, becoming horny and glabrous and finally nearly black with age; margin subobtuse, ferruginous, velvety; context woody, fulvous, 1–2 cm. thick; tubes evenly stratified, 2–3 mm. long each season, fulvous, mouths circular, 3 to a mm., edges obtuse, entire, ferruginous to fulvous; spores globose, compressed on one side, hyaline, 5.5–6 × 4.5–5 μ; cystidia fulvous, ventricose, 15–20 × 7–9 μ.

Frequent in Tennessee and Alabama on diseased trunks and stumps of various species of *Prunus*, causing decay.

2. PYROPOLYPORUS TEXANUS Murrill

Pileus ungulate, broadly attached, plane below, 3–13 × 4–11 × 2–6 cm.; surface tomentose, smooth, melleous, becoming reddish-brown or black, glabrous and rimose behind; margin very obtuse and rounded, melleous, tomentose, smooth; context woody, distinctly zonate, 1.5–2.5 cm. thick, melleous to dark-luteous with silky luster; tubes evenly stratified, not separated by layers of context, 3–5 mm. long each season, concolorous, without luster, mouths circular, 4–5 to a mm., edges obtuse, entire, melleous to fulvous; spores globose, smooth, hyaline, 4–5 μ.

Frequent on *Juniperus* in Texas, as well as in New Mexico and Arizona.

3. PYROPOLYPORUS CALKINSII Murrill

Pileus woody throughout, ungulate, 10 × 10 × 10 cm.; surface glabrous, dark-brown to black, marked with rather shallow concentric furrows, crust thin, horny, never rimose; margin rounded, concolorous with the hymenium; context very hard, woody, fulvous, 1 cm. thick; tubes in many indistinct layers, slender, minute, 7 to a mm., fulvous, mouths nearly circular, edges obtuse, entire; spores ovoid, hyaline, with thick, smooth, pale-ferruginous wall, 3–5 × 5–7 μ.

Known from a few collections on living trunks of live oak and black oak in Florida and North Carolina.

4. PYROPOLYPORUS CONCHATUS (Pers.) Murrill

Pileus conchate, broadly effused and often entirely resupinate, 1–5 × 7–10 × 0.5–1.5 cm.; surface rough, tomentose, irregularly sulcate, anoderm, brown to black, becoming thinly encrusted and slightly rimose with age; margin acute, undulate, ferruginous to fulvous, tomentose; context woody, thin, fulvous, 1–3 mm. thick; tubes indistinctly stratified, 1–2 mm. long each season, fulvous, mouths circular, 5–6 to a mm., edges obtuse, ferruginous to fulvous; spores globose, smooth, hyaline, 4–5 μ; cystidia dark-brown, ventricose, 15–30 × 7–9 μ.

Occasional throughout on decaying deciduous trunks.

5. PYROPOLYPORUS LANGLOISII Murrill

Pileus corky, fan-shaped, attached by a narrow base, often depressed behind, 8–13 × 10–25 × 0.3–1.5 cm.; surface at first anoderm, soft, clothed with brown tomentum, many times concentrically sulcate, at length glabrous, rough, indurate, black, marked with numerous shallow furrows; margin velvety, brown, thin, acute, undulate or slightly lobed; context soft to corky, indurate in age, deep-brown, 0.2–0.3 cm. thick; tubes reviving, distinctly stratified, 0.2–0.5 cm. long each season, 8–9 to a mm., brown, mouths polygonal, concolorous, edges thin at maturity; spores globose, smooth, hyaline, 3 μ.

Occasional in Louisiana at the base of dead or dying hawthorn trees, and probably occurring also in Florida.

34. FULVIFOMES Murrill

Hymenophore large, perennial, epixylous, sessile, ungulate or applanate; surface sulcate, usually anoderm and often rough or rimose; context woody or punky, brown, rarely dark-red; tubes

brown, cylindric, stratose, usually thick-walled; spores smooth, ferruginous or fulvous.

Context fulvous; found on *Robinia*.	1. *F. Robiniae*.
Context dark-reddish; found on *Juniperus*.	2. *F. juniperinus*.

1. FULVIFOMES ROBINIAE Murrill

Pileus dimidiate, ungulate to applanate, 5–25 × 5–50 × 2–12 cm.; surface velvety, smooth, soon becoming very rimose and roughened, fulvous to purplish-black, at length dull-black, deeply and broadly concentrically sulcate; margin rounded, velvety, fulvous; context hard, woody, concentrically banded, 1–3 cm. thick, fulvous; tubes stratose, 0.15–0.5 cm. long, 5 to a mm., fulvous, mouths subcircular, edges entire, equaling the tubes in thickness; spores subglobose, smooth, thin-walled, ferruginous, 4–5 μ.

Common throughout the range of its host, *Robinia Pseudacacia*, causing a very serious rot of this tree. The hymenophores were formerly used by colored people for keeping fire over night.

2. FULVIFOMES JUNIPERINUS (Schrenk) Murrill

Pileus ungulate, 3–5 × 5–8 × 5–7 cm.; surface tomentose, deeply sulcate, reddish-brown to dark-brown; margin obtuse, velvety, melleous or ferruginous to hoary; context woody, reddish-brown, 0.5–2 cm. thick; tubes indistinctly stratified, 0.5–1 cm. long each season, melleous within, reddish-brown in the older layers, mouths circular, 2–3 to a mm., edges obtuse, entire, even, melleous; spores fulvous, smooth, globose or subglobose; cystidia few, subhyaline, 100 × 20 μ.

Occasional on living trunks of *Juniperus* in Tennessee and Texas. The rot is better known than the fruit-body. *Pyropolyporus Earlei* Murrill is probably not distinct.

35. PORODAEDALEA Murrill

Hymenophore large, perennial, epixylous, sessile, conchate to ungulate; surface anoderm, sulcate, usually rough; context brown and woody; tubes concolorous, rarely in distinct layers, the hymenium varying from porose to daedaleoid; spores smooth, hyaline at maturity, becoming brownish with age; cystidia conspicuous.

1. PORODAEDALEA PINI (Thore) Murrill

Pileus hard, typically ungulate, conchate or effused-reflexed in varieties, often imbricate, 5–8 × 7–12 × 5–8 cm., smaller in

varieties; surface very rough, deeply sulcate, tomentose, tawny-brown, becoming rimose and almost black with age; margin rounded or acute, tomentose, ferruginous to tawny-cinnamon, entire, sterile in large specimens; context soft-corky to indurate, ferruginous, 5–10 mm. thick, thinner in small specimens; tubes stratified, white to avellaneous within, becoming ferruginous at maturity and in the older layers, 5 mm. long each season, much shorter in thin specimens, mouths irregular, circular or daedaleoid, often radially elongate, averaging 1 to a mm., edges ferruginous to grayish-umbrinous, glistening when young, rather thin, entire; spores subglobose, smooth, hyaline at maturity, becoming brownish with age, 5–6 × 3–4 μ; cystidia abundant, short, 25–35 × 4–6 μ.

Common throughout most of the region on living trunks of conifers, causing a very serious heart-rot. The variation in the shape of the hymenophores is exceedingly confusing.

36. GLOBIFOMES Murrill

Hymenophore large, encrusted, perennial, epixylous, compound; context ferruginous, punky; tubes cylindric, thick-walled, stratose; spores ovoid, smooth, ferruginous.

1. GLOBIFOMES GRAVEOLENS (Schw.) Murrill

Hymenophore polycephalous, globose, having the appearance of being thatched, 8–15 cm. in diameter, the center homogeneous, ferruginous, floccose and rigid; pilei very numerous, cespitose-branched, closely imbricate, occupying the periphery of the mass; pileus corky, rigid, conchate, usually plicate, 1–3 × 0.5–0.8 cm.; surface radiately sulcate, slightly zonate, purplish-fuscous, pulverulent to glabrous, slightly resinous in appearance, encrusted, grayish-black with age; margin fulvous, pulverulent, undulate or lobed, subacute, deflexed, sterile on the perpendicular portion, which is from 2 to 3 mm. long; context floccose, ferruginous, 2–5 mm. thick; tubes 2 mm. long, grayish-umbrinous, mouths circular, whitish-pulverulent to castaneous, fuliginous with age, edges thick, entire; spores globose or ovoid, smooth, ferruginous, 4 μ; cystidia ovoid, hyaline, rather abundant, 7 × 4 μ.

Occasional on dead trunks of oak, maple, and beech in Georgia and northward. Sometimes known as "sweet-knot," but the odor has also been described as disagreeable or entirely wanting. *Polyporus botryoides* Lév. is probably not distinct.

37. ELFVINGIELLA Murrill

Hymenophore large, epixylous, sessile, applanate or ungulate; surface sulcate, horny-encrusted; context brown, punky; tubes brown, cylindric, stratose, thick-walled; spores smooth, hyaline or subhyaline.

Pileus exactly ungulate; pores 3 to a mm. 1. *E. fomentaria.*
Pileus compressed-ungulate; pores 5 to a mm. 2. *E. fasciata.*

1. ELFVINGIELLA FOMENTARIA (L.) Murrill

Pileus hard, ungulate, concave below, 7–9 × 8–10 × 3–10 cm.; surface finely tomentose to glabrous, isabelline to avellaneous and finally black and shining with age, zonate, sulcate, horny-encrusted; margin obtuse, velvety, isabelline to fulvous; context punky, ferruginous to fulvous, conidia-bearing, 3–5 mm. thick; tubes indistinctly stratified, not separated by layers of context, 3–5 mm. long each season, avellaneous to umbrinous within, mouths circular, whitish-stuffed when young, 3–4 to a mm., edges obtuse, entire, grayish-white to avellaneous, turning dark when bruised; spores globose, smooth, hyaline or nearly so, 3–4 μ.

Frequent in the southern Appalachians on trunks of birch and beech, and occasionally on maple and a few other deciduous trees, causing serious decay. The punky substance of the hymenophore was formerly used in tinder-boxes, and is still used as an absorbent in surgery and for the manufacture of various ornamental and useful articles.

2. ELFVINGIELLA FASCIATA (Sw.) Murrill, comb. nov.

Pileus hard, dimidiate, applanate to ungulate, convex above, 7–10 × 8–15 × 2–6 cm.; surface finely tomentose, at length glabrous, concentrically sulcate, at first mole-colored, changing to umbrinous, and finally avellaneous with black fasciations; margin acute to obtuse, isabelline, sterile, undulate or entire; context punky, thin, ferruginous to fulvous, zonate, 3–5 mm. thick; tubes indistinctly stratified, 5–10 mm. long each season, avellaneous within, mouths circular, minute, 4–5 to a mm., edges obtuse, avellaneous to umbrinous, becoming darker when bruised; spores subglobose, smooth, light-brown, 5–7 μ.

Common throughout the Gulf states on dead trunks of various trees. The validity of the specific name used is doubtful.

38. ELFVINGIA P. Karst.

Hymenophore large, epixylous, sessile, applanate or ungulate; surface sulcate, horny-encrusted; context brown, punky; tubes brown, cylindric, stratose, thick-walled, mouths whitish or yellowish when young; spores brown; conidia present in most species on or near the surface of the pileus.

Hymenophore annual, persisting above later growths; pileus reniform, margin thin; spores roughly echinulate. 1. *E. lobata.*

Hymenophore truly perennial; tubes stratified; spores smooth or nearly so. 2. *E. megaloma.*

1. ELFVINGIA LOBATA (Schw.) Murrill

Pileus applanate, reniform to dimidiate, 5–8 × 10–15 × 1–2.5 cm.; surface concentrically sulcate, subzonate, glabrous, ferruginous to fulvous, becoming grayish-brown with age; margin thin, rarely rounded, creamy-white, smooth, entire; context punky with some horny fibers, chestnut-colored, slightly zonate, 5–8 mm. thick; tubes annual, 5–8 mm. long each season, avellaneous within, mouths circular, 4–5 to a mm., edges obtuse, entire, cremeous to umbrinous, becoming brownish when bruised; spores ovoid, dark-brown, asperulate, 8–10 × 6–7 μ.

Occasional throughout on certain deciduous trees, especially oak, causing decay of the trunk. The hymenophores are peculiar in being annual.

2. ELFVINGIA MEGALOMA (Lév.) Murrill

Pileus hard, dimidiate, applanate, 6–15 × 8–30 × 1–4 cm.; surface milk-white to gray or umbrinous, glabrous, concentrically sulcate, encrusted, fasciate with obscure lines, conidia-bearing, usually brownish during the growing season from the covering of conidia; margin obtuse, broadly sterile, white or slightly cremeous, entire to undulate; context corky, usually rather hard, zonate, fulvous to bay, 5–10 mm. thick, thinner with age; tubes very evenly stratified, separated by thin layers of context, 5–10 mm. long each season, avellaneous to umbrinous within, mouths circular, 5 to a mm., whitish-stuffed when young, edges obtuse, entire, white or slightly yellowish to umbrinous, quickly changing color when bruised; spores ovoid, smooth or very slightly roughened, pale-yellowish-brown, truncate at the base, 7–8 × 5–6 μ.

Very common from the mountains of Alabama northward on dead or diseased trunks of most deciduous trees, and also on

conifers in certain sections, causing decay of the sapwood and exposed heartwood. It is known to cause root-rot in aspen and is doubtless destructive to the roots of other trees. The immense hymenophores are often used by amateur artists for etching. The presence of conidia has recently been questioned.

39. GANODERMA P. Karst.

Hymenophore large, sessile or stipitate, perennial or annual, epixylous; surface sulcate, covered with reddish-brown varnish; context punky, brown or pallid; tubes cylindric, concolorous; spores ovoid, brown.

Context ochraceous to isabelline above, tawny below.	
Hymenophore perennial; margin of pileus truncate at maturity; stipe present.	1. *G. Curtisii.*
Hymenophore annual; margin of pileus acute; stipe present or absent.	2. *G. sessile.*
Context dark-bay throughout; stipe absent.	
Pileus zonate, even; tubes not stratified.	3. *G. zonatum.*
Pileus sulcate, azonate; tubes stratified.	4. *G. sulcatum.*

1. GANODERMA CURTISII (Berk.) Murrill

Pileus corky to woody, reniform, convex above, concave below, 5–10 × 8–15 × 1–2 cm.; surface glabrous, ochraceous to latericeous or bay, at first laccate, the varnish soon disappearing, broadly sulcate; margin obtuse to truncate, sulcate, ochraceous, entire, glabrous; context soft-corky, zonate, ochraceous above, fulvous below, 5 mm. thick; tubes perennial, indistinctly stratified, 5–8 mm. long each season, avellaneous-umbrinous within, mouths circular to slightly angular, 3–5 to a mm., edges entire, white or cremeous, becoming umbrinous; spores ovoid, attenuate and truncate at the apex, yellowish-brown, 9–11 × 5–8 μ; stipe usually eccentric or lateral, erect or ascending, equal or slightly enlarged above, cylindric, bay, laccate, the substance similar to the context and darker at the center, 5–10 × 2–3 cm.

Rather common throughout on or about decayed trunks and stumps of oaks and other deciduous trees.

2. GANODERMA SESSILE Murrill

Pileus corky to woody, dimidiate, sessile or stipitate, imbricate or connate at times, conchate to fan-shaped, thickest behind, thin at the margin, 5–15 × 7–25 × 1–3 cm.; surface glabrous,

laccate, shining, radiate-rugose, concentrically sulcate, yellow to reddish-chestnut, at length opaque-dark-brown, usually marked near the margin with alternating bay and tawny zones; margin usually very thin and acute, often curved downward and undulate, rarely becoming truncate, white, at length concolorous; context soft-corky or woody, radiate-fibrous, concentrically banded, ochraceous-fulvous; tubes 0.5–2 cm. long, 3–5 to a mm., brown within, mouths circular or angular, white or grayish-brown, edges thin, entire; spores ovoid, obtuse at the base, attenuate and truncate at the apex, smooth, yellowish-brown, 9–11 × 6–8 μ; stipe laterally attached, usually ascending, irregularly cylindric, 1–4 × 0.5–1.5 cm., resembling the pileus in color, surface, and substance, often obsolete.

Frequent throughout on diseased trunks and dead stumps of both deciduous and coniferous trees. Very similar in its stipitate forms to *Polyporus lucidus* of Europe. *G. subperforatum* Atk., described from Ohio, is probably distinct.

3. GANODERMA ZONATUM Murrill

Pileus very soft-corky, sessile, dimidiate, applanate or convex above, concave below; surface glabrous, zonate, not sulcate, 5 × 7 × 1.5 cm.; margin velvety, acute, becoming obtuse and concolorous; context very soft, floccose, radiate-fibrous, concentrically banded, 0.5 cm. thick, chocolate-brown; hymenium velvety, not stratose; tubes 1 cm. long, 3–4 to a mm., umbrinous within, mouths white to umbrinous, regular, polygonal, stuffed at first with whitish material, covered 0.5–2 cm. from the margin with yellowish or reddish varnish; edges entire, obtuse to acute; spores elongate-ellipsoid, smooth, pale-yellowish-brown, 8–10 × 4–6 μ.

Found once on dead wood in Florida.

4. GANODERMA SULCATUM Murrill

Pileus corky, dimidiate, sessile or arising from a lateral tubercle, plane or convex above, thickest behind, 8 × 11 × 2 cm.; surface laccate, glabrous, azonate, fulvous to chestnut, deeply sulcate; margin rounded, velvety, ochroleucous, at length concolorous; context very soft, floccose, radiate-fibrous, concentrically banded, 1 cm. thick, umbrinous-chestnut; tubes indistinctly stratified, 1.25 cm. long, 4–5 to a mm., umbrinous within, mouths whitish or yellowish, at length umbrinous, dissepiments entire, obtuse; spores ellipsoid, pale-yellowish-brown, smooth, 8–10 × 4–6 μ.

Occasional on dead trunks of palmetto in Georgia and Florida.

40. CERRENA (Micheli) S. F. Gray

Hymenophore small, epixylous, sessile, conchate, annual; surface anoderm, hairy or subglabrous, zonate or sulcate; context thin, white, fibrous, flexible; hymenium at first labyrinthiform, soon becoming irpiciform from the splitting of the dissepiments; spores smooth, hyaline.

1. CERRENA UNICOLOR (Bull.) Murrill

Pileus coriaceous, sessile, imbricate, dimidiate to flabelliform, conchate, often laterally confluent, 2.5–3.5 × 5–10 × 0.1–0.3 cm.; surface villose-strigose, rugose, zonate, plicate, isabelline to fulvous, becoming avellaneous with age and blackish and nearly glabrous behind; margin acute, undulate to lobed, paler, zonate, strigose-tomentose; context very thin, membranous, white, homogeneous, scarcely 1 mm. thick; tubes decurrent, labyrinthiform, 1–3 mm. long, white or isabelline to fuliginous or umbrinous, averaging 2 to a mm., edges acute, uneven, soon becoming dentate-lacerate, giving the hymenium an irpiciform appearance; spores ovoid, smooth, hyaline, 4–6 × 3–4 μ.

Very common throughout on dead deciduous wood, and rarely on coniferous wood. This species has recently been found in Europe to be parasitic on horsechestnut, beech, black locust, and red maple.

41. DAEDALEA Pers.

Hymenophore epixylous, usually large and annual, sessile, applanate to ungulate; surface anoderm, glabrous, often zonate; context white or wood-colored, rigid, woody or punky; hymenium normally labyrinthiform, but varying to lamellate and porose in some species; spores smooth, hyaline.

Tubes one to several millimeters in transverse diameter; surface usually brown or discolored.
- Pileus thick, triangular, margin obtuse. 1. *D. quercina.*
- Pileus thin, applanate, margin thin. 2. *D. confragosa.*

Tubes less than one half millimeter in transverse diameter; surface white or yellowish. 3. *D. ambigua.*

1. DAEDALEA QUERCINA (L.) Pers.

Pileus corky, rigid, dimidiate, sessile, imbricate, applanate, convex below, triangular in section, 6–12 × 9–20 × 2–4 cm.; surface isabelline-avellaneous to cinereous or smoky-black with age, slightly sulcate, zonate at times, tuberculose to colliculose in the older portions; margin usually thin, pallid, glabrous; con-

text isabelline, soft-corky, homogeneous, 5–7 mm. thick; tubes labyrinthiform, becoming nearly lamellate with age in some specimens, 1–2 cm. long, 1–2 mm. broad, chalk-white or discolored within, edges obtuse, entire, ochraceous to avellaneous.

Occasional northward on stumps, trunks, and timbers of oak and chestnut.

2. DAEDALEA CONFRAGOSA (Bolt.) Pers.

Pileus corky to woody, imbricate, sessile, dimidiate, convex or plane above, variable in size, 2–7 × 3–10 × 0.5–1.5 cm.; surface multizonate, rugose, scrupose, often tuberculose, becoming glabrous, isabelline or avellaneous to latericeous-fuscous; margin thin, entire to lobed, pallid, fertile, dark-brown when bruised; context corky to woody, white to avellaneous, zonate, 3–10 mm. thick; tubes very variable, porose or labyrinthiform, often becoming lamellate with age, 0.5–1.5 mm. broad, 5–10 mm. deep, white or avellaneous within, mouths grayish-pruinose when young, becoming umbrinous or reddish-fuscous, edges thin, becoming lacerate-dentate and often fimbriate, turning at once to yellowish-brown when bruised; spores smooth, hyaline, cylindric to ellipsoid, 5–8 × 2–3 μ.

Extremely common throughout on various forms of deciduous wood. This is one of the most variable species known.

3. DAEDALEA AMBIGUA Berk.

Pileus corky, reniform, sessile or spuriously stipitate, simple, applanate, 8–12 × 10–20 × 0.5–1.5 cm.; surface glabrous, smooth, azonate, polished, milk-white to yellowish, sometimes purplish-black with age; margin rather thin, white, entire or undulate; context floccose, zonate, white, 4–8 mm. thick; tubes varying from circular to labyrinthiform, minute, white, 3 to a mm. measured transversely, 4–6 mm. deep, edges thick, entire, white to isabelline; spores globose, smooth, hyaline, 2–3 μ.

Rather common throughout, except in the mountains, on dead trunks of deciduous trees.

42. LENZITES Fries

Hymenophore small, annual, epixylous, sessile, conchate; surface anoderm, usually zonate and tomentose; context white, coriaceous, flexible; hymenium lamellate, the radiating gill-like dissepiments connected transversely at times, especially in youth; spores smooth, hyaline.

1. LENZITES BETULINA (L.) Fries

Pileus thin, coriaceous, sessile, dimidiate to flabelliform, imbricate, conchate, 3–4 × 4–7 × 0.3–1 cm.; surface conspicuously tomentose, velvety, multizonate, somewhat uneven, often radiate-rugose to plicate, avellaneous with latericeous zones, becoming olivaceous with age; margin thin, undulate to lobed at times; context very thin, white, membranous, scarcely a mm. thick; furrows slightly anastomosing when very young, 1–2 mm. broad, 3–10 mm. deep, edges thin, entire to undulate, slightly notched with age, cremeous within, ochroleucous to sordid-ochraceous without; spores globose, smooth, hyaline, 6 μ.

Extremely common throughout on various forms of dead deciduous wood and rarely on coniferous wood.

43. GLOEOPHYLLUM P. Karst.

Hymenophore small, annual, epixylous, sessile; surface hairy or glabrous, anoderm, often zonate; context tough, brown; hymenium normally lamelloid or daedaleoid, but frequently poroid in some species; spores smooth, hyaline.

Context avellaneous to umbrinous, furrows about 0.5 mm. broad.	1. *G. trabeum.*
Context ferruginous to castaneous, furrows about 1 mm. broad.	
Surface hirsute.	2. *G. hirsutum.*
Surface finely tomentose to glabrous.	3. *G. Berkeleyi.*

1. GLOEOPHYLLUM TRABEUM (Pers.) Murrill

Pileus corky, rather soft, dimidiate, sessile, laterally connate, plane or convex above, nearly plane below, 2 × 4–8 × 0.5–1 cm.; surface anoderm, tomentose, smooth or slightly tubercular, usually azonate, opaque, isabelline when fresh, becoming avellaneous to umbrinous and finally fuliginous behind, changing immediately to ferruginous or fulvous when bruised; margin very thin, nearly entire, ochroleucous; context soft, punky, homogeneous, dull-umbrinous, 1–3 mm. thick; tubes annual, 2–4 mm. long, ochroleucous to isabelline within, mouths irregular, daedaleoid or radially elongate, averaging 0.5 mm. in width, edges uneven, isabelline to grayish-umbrinous or fulvous, the transverse walls often splitting with age and giving the hymenium a lamelloid appearance; spores cylindric, smooth, hyaline, 9–12 × 3–4 μ.

Common throughout on dead deciduous and coniferous wood, structural timbers in particular.

2. GLOEOPHYLLUM HIRSUTUM (Schaeff.) Murrill

Pileus hard, corky to woody, slightly flexible, imbricate, sessile, laterally connate, often decurrent, oblong-dimidiate to flabelliform, conchate, 2–3 × 4–8 × 0.3–1 cm.; surface zonate, strigose-tomentose, anoderm, rather uneven, reddish-fulvous to fuliginous or umbrinous; margin rather thick, sterile, isabelline, undulate, finely tomentose, becoming acute and darker in age; context soft-corky, homogeneous, fulvous, about 2 mm. thick; tubes usually lamelloid, anastomosing when young, ochraceous to grayish-umbrinous, 0.5–1 mm. broad, 2–5 mm. deep, edges thin, undulate; in a poroid variety, tubes circular, regular, 2 to a mm., edges thick, firm, entire; spores ellipsoid, smooth, hyaline, 8–12 × 3–4 μ.

Extremely common throughout on dead coniferous wood, and rarely on deciduous wood. It is very destructive to coniferous timber, and sometimes causes heart-rot in living trunks.

3. GLOEOPHYLLUM BERKELEYI (Sacc.) Murrill

Pileus corky, subrigid, dimidiate, sessile, imbricate, laterally connate, plane above, usually convex below, 3–5 × 5–10 × 0.8–2 cm.; surface finely tomentose to glabrous and subshining, zonate, slightly sulcate, radiately furrowed, cremeous or isabelline to fulvous or chestnut-colored and finally black behind; margin obtuse, tomentose, white or cream-colored to ochraceous-fulvous; context punky to soft-corky, homogeneous, 2–4 mm. thick, fulvous, tinged with rhubarb when very young; tubes irregular, daedaleoid, branched or forked, becoming much elongate radially, 5–15 mm. deep, about 1 mm. broad, wider with age, edges white or ochraceous to fulvous, thin, rigid, sinuate, rarely splitting even with age.

Frequent on dead coniferous wood in the Gulf states.

44. CYCLOPORUS Murrill

Hymenophore annual, tough, anoderm, terrestrial, centrally stipitate; context soft, spongy, ferruginous; pores at first polygonal, soon becoming continuous concentric furrows, dissepiments thin, lamelloid; spores ovoid, smooth, ferruginous.

1. CYCLOPORUS GREENEI (Berk.) Murrill

Pileus circular, obconic to explanate, rarely cespitose, 5–10 cm. broad, 5–10 mm. thick at the center, much thinner at the margin; surface undulate, zonate, tomentose to glabrous and

shining, ferruginous to fulvous, fuliginous-black in some old plants; margin at first rounded, sterile, undulate, isabelline, becoming very thin, darker, and somewhat eroded with age; context spongy, fragile, zonate, ferruginous to fulvous, scarcely 1 mm. thick in mature plants; tubes oblong-polygonal when very young, soon becoming concentric furrows, 5–8 mm. deep, 1–2 mm. wide, undulate, pale-fulvous to fuliginous, edges isabelline to umbrinous, very thin, uneven, splitting with age; spores ovoid, smooth, pale-ferruginous, 5–6 × 10–12 μ; stipe central, enlarged above, irregular, tomentose, fulvous to fuliginous, spongy and brown within, 3–8 cm. long, 1.5–2 cm. thick.

Occasional on the ground in woods in the mountains of North Carolina.

SUPPLEMENTARY NOTES

Pseudofavolus auriculatus Pat. Bull. Soc. Myc. Fr. 24: 4. 1908. Described from specimens collected by Langlois on dead branches in Louisiana and said to be near *Hexagona cucullata* (Mont.) Murrill.

Polyporus calvescens Berk. Ann. Nat. Hist. 3: 390. 1839. Described from New Orleans, Louisiana, and not since collected. It cannot be referred to *Hapalopilus gilvus*.

Coriolopsis crocata (Fries) Murrill probably occurs rarely on the Gulf coast.

Fulvifomes Everhartii (Ellis & Gall.) Murrill has been reported from North Carolina.

Spongipellis fragilis (Fries) Murrill, comb. nov. *Polyporus fragilis* Fries, Elench. Fung. 86. 1828. Occasional on dead coniferous wood in the eastern United States, southward to the mountains of western North Carolina. The surface and tubes are white, changing to ferruginous or chestnut when handled.

Trametes Petersii Berk. & Curt. Grevillea 1: 66. 1872. Described from specimens collected in Alabama as applanate, pale-fulvous, finely tomentose, slightly sulcate-zonate near the margin; tubes minute, with rigid dissepiments. This species has not been collected since it was discovered. It can hardly be referred to *Hapalopilus gilvus*.

Grifola ramosissima (Scop.) Murrill has been reported from Tennessee.

Specimens that appear to be *Elfvingia tornata* were recently received from Austin, Texas.

Fomes torulosus is said to have been found in New Orleans on the trunk of a living live oak.

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